South East Midlands LEP Transport Strategy

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Contents

Tables

Figures

Appendices

Executive Summary

As part of the evidence base for the South East Midlands Local Economic Partnership (SEMLEP) Strategic Economic Plan (SEP) this first stage of a two stage transport strategy provides a review of existing evidence to determine the broad impacts of planned development assumptions and transport investment in the SEMLEP area. This first phase Strategy also provides a high level review of deliverable and value for money transport schemes considered most appropriate to support both the wider strategic economic development goals of the SEP and the local priorities of the constituent members of the SEMLEP.

Strategic Links

The SEMLEP region lies at the heart of the national transport infrastructure offer. Five key corridors of the strategic road network cross in the SEMLEP region along with the West coast mainline, East coast mainline, Midland Mainline, Chiltern line and in the next plan period, HS2. The region also hosts London Luton Airport, DIRFT international rail freight terminal and more than a dozen key interchange and access nodes on the mainline rail network.

The importance of a well connected SEMLEP area is highlighted within the area by the number of key Highways Agency routes identified in their Route Based Strategies, which is addressed in more detail in **Section 7** of this strategy.

Enabling Growth

Large parts of the SEMLEP area previously formed the majority of the MKSM sub-region, identified for significant growth by the Government, with a number of major transport strategy reviews undertaken to identify how this growth might best be supported by transport investment. **Section 2** of this strategy concludes that, due to the similarities in the spread of planned growth since that time, with development continuing to be focused in the areas considered to be most the accessible, many of the overriding conclusions from that work will continue to be relevant, in particular:

- That there is a need to strengthen east-west links to, from and within the area;
- That whilst all areas have significant plans and potential for growth, Bedford, Milton Keynes the areas of Dunstable and Houghton Regis adjoining Luton offer the greatest potential for longer term growth;

- That the M1 plays an important role in the current and future operation of the SEMLEP area; serving a joint role providing for traffic travelling through the SEMLEP area as well as significant use for trips between local urban areas; and
- That there is scope to maximise the benefits associated with public transport connectivity, particularly east-west rail and the potential to improve inter-urban bus based linkages.

A further review of the current and forecast transport situation within the SEMLEP area identified that:

- Without further investment in transport infrastructure and services there will be an increasing level of pressure on the main links between urban areas within the SEMLEP area, which could also impact on longer distance movements;
- That schemes which enable the early release of development sites can also help to deliver wider improvements to the transport network, offering the potential for benefits to both the local and national economy;
- That there is significant scope to provide for expected large increases in shorter distance and local trips generated by new development through investment in sustainable transport and smarter choices measures and incentives, potentially led by individual or joint local authority LSTF programmes and supported by the SEMLEP.

It is clear that appropriate transport investment has a vital role to play in the economic vitality and wellbeing of the SEMLEP area and that this can support the wider economy by both unlocking bottlenecks on the national strategic transport network and by improving linkages between these networks.

Proposed Priority Schemes

The SEMLEP Local Transport Board (LTB) have identified 4 projects as being essential to secure the early delivery of development and therefore as the priority for the first stages of funding, these 4 projects are:

- A421 Dualling from Fen Farm to J13 of the M1;
- Bedford Western Bypass Phase 2 (Northern Section);
- Improved Highway Access to London Luton Airport; and
- Woodside Link

Each of these projects have been reviewed against the evidence base provided within this Strategy and support a range of positive outcomes for the SEMLEP area, releasing growth, enabling improvements to the wider movement of people and goods and integrating with other local and national schemes, working with partners including the Highways Agency. More detail is provided in **Section 8** whilst a brief summary of the main transport priorities supported by each priority scheme is provided in **Table 1** with 1 tick for areas where a scheme supports the transport strategy objectives and 2 ticks for areas where a scheme significantly supports a transport objective.

Table 1 - LTB Priority Schemes (2015/16)

Scheme	Protect and enhance the built and natural environment	Provide high quality, safe access to services and opportunity	Maintain and enhance the regions links with the wider economy	Build capacity to enable growth and economic development
A421 Dualling		✓	✓✓	✓✓
Bedford Western Bypass	✓✓		✓	✓✓
Improved Highway Access to London Luton		✓	✓✓	✓✓
Woodside Link	✓		✓✓	✓✓

The 4 priority schemes are particularly focused upon the enabling of development and the support of economic growth; however the SEP also identifies a full range of projects proposed for delivery throughout the lifetime of the SEP covering the subsequent period 2015/16-2020/21. These projects consist of the following:

Table 2 - SEP Transport Schemes (2015/16-2020/21)

Scheme	Protect and enhance the built and natural environment	Provide high quality, safe access to services and opportunity	Maintain and enhance the regions links with the wider economy	Build capacity to enable growth and economic development
A421 corridor improvements		✓	✓	✓✓
Abthorpe Roundabout	✓		✓	✓✓
Aylesbury Eastern Link Road and Stocklake Link	✓✓		✓	✓✓
Bletchley Station Improvements	✓	✓	✓	✓
Daventry Development Link Road	✓		✓✓	✓✓
Joining up St. James Mill Road	✓	✓		✓
Kettering Energy and SUE	✓		✓✓	✓✓
London Luton Airport Surface Access	✓	✓✓	✓	✓
Smarter Routes into Employment	✓	✓✓		✓

The schemes proposed have the ability to support all the main objectives of the SEP and of the supporting SEMLEP Transport Strategy, whilst each of the schemes proposed for delivery through the SEP have also been independently reviewed and assessed in terms of deliverability

to ensure that the first phase of transport investment can have an immediate and positive impact on the SEMELP area and the surrounding regions.

Longer term Projects

The Transport Strategy for the SEMLEP area also considers a range of projects which could be considered in the longer term, with an initial prioritisation process carried out to identify projects with the potential to support the objectives of the Transport Strategy most effectively. In a number of cases these are strategic public transport projects which are not currently at a state of readiness to be funded, but with the potential to provide significant longer term benefits. These projects (and others arising throughout the lifetime of the SEP) will be subject to ongoing review and assessment including updated positions (where appropriate) with regards to project deliverability and value for money. A summary table of the wider range of potential longer term transport projects is provided in **Section 9** of this Strategy.

Managing, Monitoring and Developing

Monitoring the success of the plan and the impacts of the transport investment proposed through the SEP will be based upon a balance of qualitative and quantitative performance indicators which will review the level of support achieved for a range of outcomes, including:

- Direct and indirect release of growth;
- Improvements in the perceived and actual movement of people and goods;
- Improvements in levels of access to services and opportunity;
- Protection of the built and natural environment; and
- Improved levels of user experience and satisfaction

As the Transport Strategy for the SEMELP area continues to develop, it is clear that investment in the SEMLEP region will have profound and positive impacts on the both the local and the national transport offer, making a significant contribution to the efficient and effective delivery of the government growth agenda.

1 Introduction

BACKGROUND TO THE TRANSPORT STRATEGY

1.1 The South East Midlands Local Enterprise Partnership (SEMLEP), as the body responsible for enabling and delivering economic growth and development in the South East Midlands area, are responsible for the preparation of the Strategic Economic Plan (SEP), titled 'In Pursuit of Growth'. The SEP sets out future investment priorities for the area and in particular measures considered appropriate to encourage and enable growth and economic development.

1.2 The SEP is based around 4 investment pillars:

- Business Productivity;
- Markets;
- Workforce Skills; and
- Infrastructure

1.3 Understanding the transport needs of the SEMLEP area is a key part of the SEP, in particular supporting the Infrastructure Pillar and related objectives. To address this SEMLEP plan the delivery of a two stage transport strategy. This report forms the first stage of that work and provides a review of existing evidence to determine the impact of changes in development assumptions and transport investment since the previous studies related to the MKSM sub-region were undertaken (dated between 2008 and 2010). This first stage of transport strategy work also provides an additional high level review of the transport schemes considered most appropriate to deliver the current transport priorities for the SEMLEP area.

1.4 A separate second stage of transport work will provide a more detailed travel data collection, modelling and monitoring programme. The precise details of this second stage will be developed following discussion with the 'Transport Catapult'.

1.5 The study area for this strategy covers the following local highway and planning authorities:

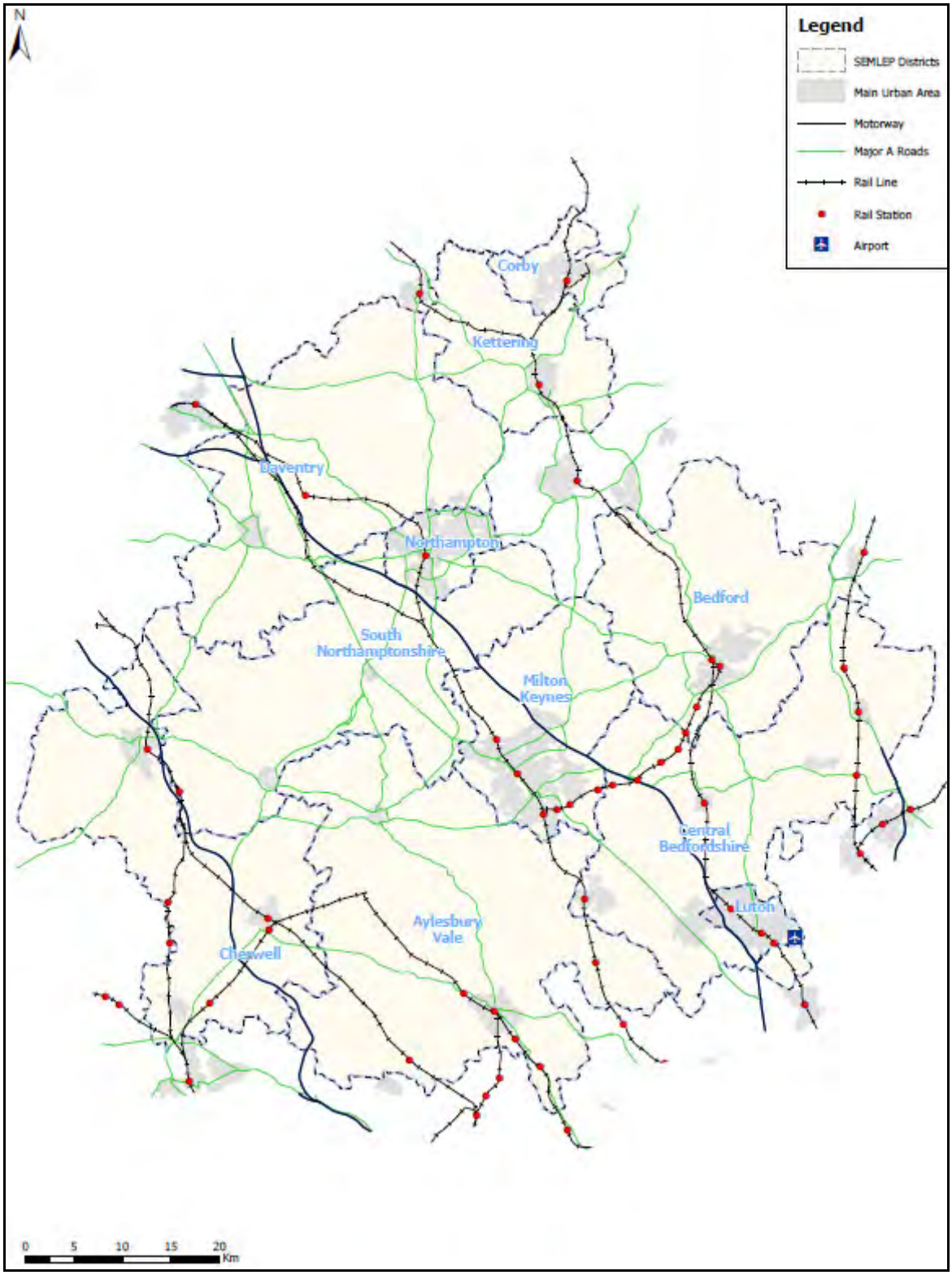
- Aylesbury Vale (planning);
- Bedford;
- Central Bedfordshire;

- Cherwell (planning);
- Corby (planning);
- Daventry (planning);
- Kettering (planning);
- Luton;
- Milton Keynes;
- Northampton (planning); and
- South Northamptonshire (planning).

1.6 A plan detailing the extent of the study area is provided on the following page and at a larger scale appended to the end of this report as **Figure 1**.

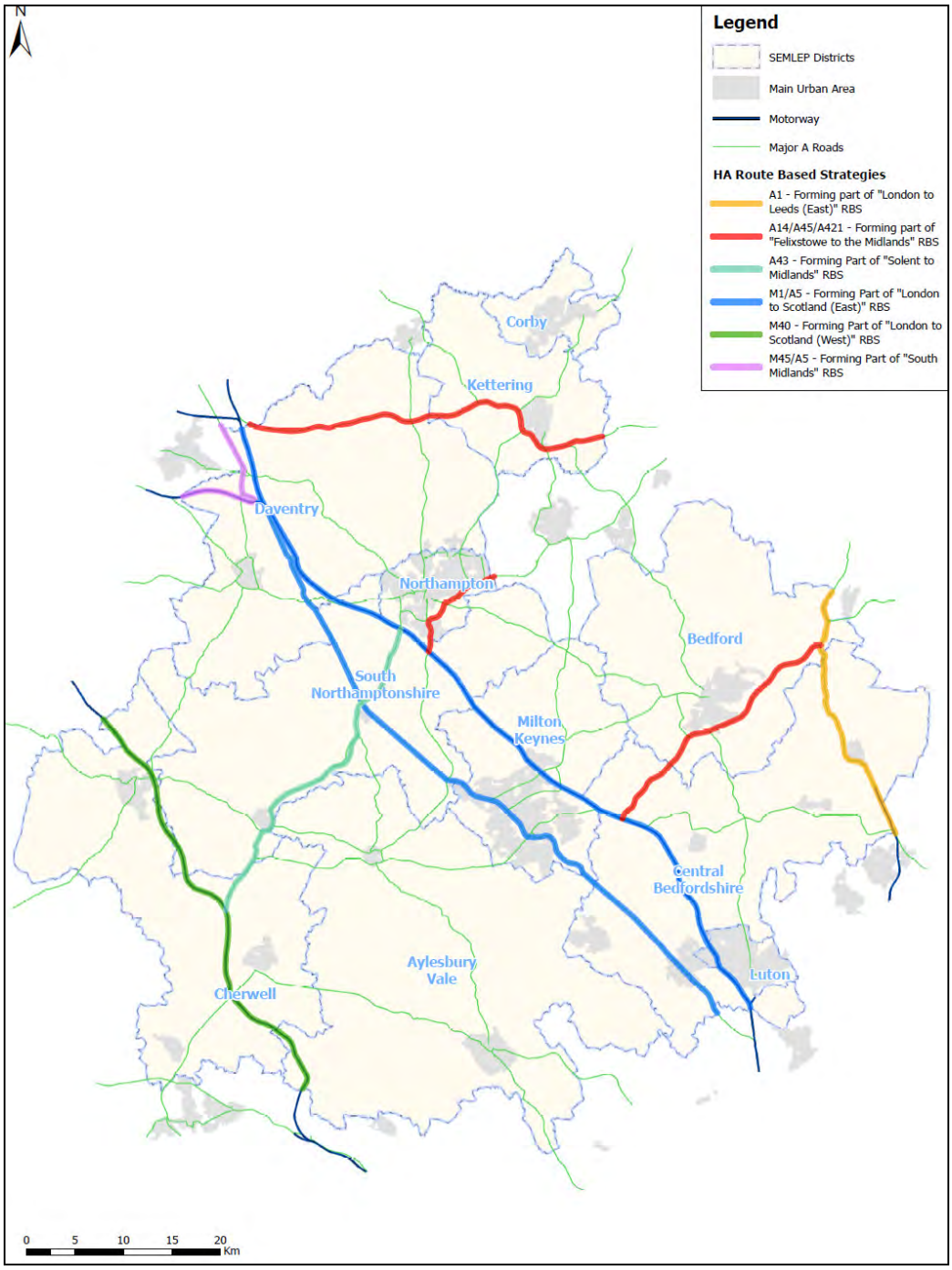
1.7 The strategy has also taken into account wider transport implications including the plans and proposals of adjacent LEPs and national bodies such as the Highways Agency and Network Rail.

Figure 1 - Strategy Area



1.8 The SEMLEP area sits at the centre of a number of key national north–south and east–west routes, as detailed in **Figure 2** below, which summarises the main routes within the area which are covered by the Highways Agency emerging Route Based Strategies.

Figure 2 – Highways Agency Route Strategies within the SEMLEP area.



1.9 This remainder of this report covers the following main areas:

- **Section 2**: Provides a review of the key findings of previous transport strategy documents relevant to the study area;
- **Section 3**: Summarises planned levels of growth and development for the SEMLEP area and identifies changes since the previous MKSM study work was undertaken;
- **Section 4**: Review the latest relevant local policy objectives and their relationship with the main priorities for SEMLEP;
- **Section 5**: Reviews the current and expected transport conditions relevant to the SEMLEP area;
- **Section 6**: Provides a summary of the role of smarter choices and other local sustainable transport interventions in delivering an overall transport strategy for the SEMLEP area;
- **Section 7**: Provides details of the ways in which proposed schemes are expected to integrate with other areas of investment, including Local Transport Plan projects at the local level and Highways Agency Route Based Strategy Improvements and Network Rail projects at the Intra-urban level;
- **Section 8**: Provides an evidence based review of the transport case for the proposed SEMLEP SEP schemes;
- **Section 9:** Identifies a number of potential longer term transport projects for the SEMLEP area; and
- **Section 10**: Provides a summary of potential monitoring and assessment criteria for the SEP transport schemes.

2 Previous Studies – Key Findings

INTRODUCTION

2.1 One of the main aims of this first stage of transport strategy work to support the South East Midlands LEP SEP is to review the previous transport strategies for the area and the related identified strategic transport needs and proposed schemes. The review process can then identify whether the current transport and movement priorities for the South East Midlands area, to be addressed through the SEP are consistent with those previously identified, and therefore if the previously identified transport schemes also remain appropriate.

2.2 There were two major transport strategy projects carried out within the last 5 years which cover the majority of the SEMLEP area. The area was formerly one of four growth areas defined by Government and known as the Milton Keynes South Midlands (MKSM) sub region. The most recent previous transport studies undertaken in the sub-region were the MKSM Transport Strategy (dated July 2009) which considered strategic transport challenges and opportunities relating to the planned growth of the sub–region and the MKSM Transmodal Study (dated May 2010), which examined the opportunities for improving travel on the sub regional strategic highway and rail corridors.

2.3 The following section of this report summarises the main findings of each of these studies.

MKSM TRANSPORT STRATEGY (JULY 2009)

2.4 The document 'MKSM Transport Strategy (Connecting the MKSM sub-region)' was prepared for the MKSM partnership by Colin Buchanan consultants with the final report published in July 2009. The focus of the report was enabling the successful delivery of the growth agenda by relating the spatial distribution of new homes and jobs in the sub-region to existing and future travel demands and identifying transport interventions to support the inter-urban movement of people and goods by road, rail and bus.

2.5 The main findings of the report were that:

- Northampton had ambitious targets for jobs growth, with the achievement of these targets reliant upon maintaining strong commuter links with the surrounding towns. The A43 / A45 corridor and the M1 were predicted to become increasingly congested, which

limited the overall accessibility of Northampton despite its relatively good access to strategic links, i.e. to motorway networks and the West Coast Main Line Rail.

- Milton Keynes' planned jobs growth was in line with its high level of accessibility, also benefiting from access to the M1 and West Coast Main Line. However, the M1 itself was predicted to be under increasing levels of pressure from longer-distance traffic.
- The Luton / Dunstable area had high levels of inter-urban accessibility by road and rail; however congestion within the urban area represented a barrier to urban development. Accessibility by 2021 was expected to benefit from the completion of the A5–M1 Link and the Luton–Dunstable busway. However, Luton / Dunstable was also constrained to a degree by pressure on M1 and other corridors to the east and south-east of Luton.
- Bedford had high levels of rail access, east–west links were considered vital and the completion of the A421 improvements linking to Milton Keynes were also expected to significantly improve Bedford's overall levels of accessibility.
- Access to jobs by road in North Northamptonshire is commensurate with levels of expected growth across Corby, East Northamptonshire, Kettering and Wellingborough.
- Aylesbury shows lower levels of accessibility than the larger towns, although this was reflected in lower growth targets. In the case of Aylesbury, the limiting factors include a more modest road network rather than congestion, particularly on the north-south corridor linking to High Wycombe and the Thames Valley.

2.6 Based upon the review of development pressures and relative levels of accessibility, post 2021 the report recommended the most suitable locations for additional growth in the MKSM sub-region as being Bedford, Luton / Dunstable and Milton Keynes.

2.7 The MKSM Transport Strategy identified a number of 'problem' corridors within the South-East Midlands that, without mitigation, could constrain planned levels of growth and development. The main corridors identified in the strategy are summarised below:

- M1 corridor: from J10 to J16, local parallel routes (including A5/A43/A508/A4146/A505) were also predicted to be increasingly congested as traffic used these to avoid congestion on the M1.

- Northampton Arc: Covering the main local north-south routes, i.e. the A43 & A45, which serve a combination of local and strategic functions, resulting in significant increases in expected congestion.
- North-South corridor around Aylesbury: Specifically the route from Milton Keynes to High Wycombe and also links to Luton / Dunstable.
- The Luton / Dunstable Gateway: Between Luton and the 'A1' towns of St. Albans and Hemel Hempstead.

2.8 The MKSM Transport Strategy also made a series of high level proposals with regards to future transport priorities for the MKSM sub-region, summarised below:

- A joint M1 study, in light of concerns that the 'Managed Motorways' project (now called 'Smarter Motorways') could impede access to the three largest towns.
- Comprehensive review of the 'Northampton Arc'.
- Develop common Smarter Choices Initiatives across the sub-region.
- Improve East–West Links, particularly the A421 / A428 through Bedford and links between the A505 to the M1.
- Promotion of a comprehensive Inter-urban bus network.
- To lobby for an all movements junction at junction 19 of the M1 (connecting with A14 / M6).
- Participate in the HS2 process to ensure MKSM aspirations are recognised.
- Lobby for improved access to Milton Keynes.
- Lobby for East–West Rail project.

MKSM TRANSMODAL STUDY (MAY 2010)

2.9 The MKSM Transmodal Study was one of a series of thematic DaSTS (Developing a Sustainable Transport System) studies. This first stage report built upon elements of the MKSM transport strategy work, focusing upon the transmodal corridor from London to the West Midlands (comprising the M1 and the West Coast Main Line).

2.10 As a stage 1 report (with the further stages of work not being completed following the end of the DaSTS set of studies prior to the second stage of work being undertaken), the report did

not identify detailed projects. However, it did make a number of overall observations and recommendations with regards to the operation of the transmodal corridor within the MKSM sub-region. The main findings are summarised below:

- Analysis of peak hour traffic on the M1 within the MKSM sub-region indicated that 80% of traffic was travelling to, from or within the MKSM region – i.e. J10-J19.
- Conversely the West Coast Main Line serves a more national role, with 50% of trips being through movements and only 5% of trips being Intra-MKSM trips.
- Congestion on the M1 was identified as a significant future constraint upon delivering effective growth within the MSKM area.

2.11 The Transmodal study went on to identify 5 High Level Challenges:

- Providing the economic conditions to support sustainable growth: specifically by balancing housing delivery and job creation.
- Providing the level of strategic connectivity to support growth in MKSM: overcoming the constraints caused by congestion on the M1 (including promotion of bus and rail alternatives), enable strategic connectivity to the M1 from growth areas.
- Reducing the need to travel within MKSM: Reduce trips by balancing jobs and homes and providing alternative travel options.
- Increasing the use of more sustainable modes of travel within MKSM: Improved access to, and attractiveness of, sustainable modes.
- Reduce Carbon Emissions from Transport Sources in MKSM: specifically by encouraging sustainable transport for inter-urban movements, increase use of sustainable modes within the urban areas, increase levels of containment within main urban areas.

2.12 The study also considered 6 potential strategy responses to future pressure on the Transmodal Corridor:

- Non Transport Measures and Demand Management: including smarter choices measures and parking controls within the main urban areas and the use of planning controls to encourage greater containment of trips.

- Improved Intra-MSKM Rail Connectivity focused on East–West Rail: providing for improved East-West linkages between Milton Keynes and Bedford and enhanced bus-rail connectivity at key stations.
- Improved Inter-Regional Rail Connectivity: providing increased rail frequencies and faster direct services.
- Improved Inter-Regional Bus Connectivity: High capacity inter-regional services supported by bus priority and with high quality links between inter-regional and local bus services in urban areas.
- Improved Intra-Urban Bus Services: to maximise the benefits of self containment, making intra-urban movements more attractive than inter-urban movements.
- Managing the capacity and resilience of MKSM's strategic road network: Improving performance by managing demand and prioritising use. Extending 'managed motorways' from J10-J13 to J19 (and potentially also extended onto other parts of the network).

2.13 The stage 1 report the considered ways in which these strategic responses could be 'packaged' together. With the following main options considered:

Table 3 – Transmodal Study Scheme Packages

Package Option	Non Transport Measures and Demand Management	Improved Intra MKSM Rail focused on East-West Rail	Improved Inter-Regional Rail Connectivity	Improved Inter-Regional Bus Connectivity	Improved Intra-Urban Bus Services	Managing the capacity of the Strategic Road network
A	✓				✓	
B	✓	✓			✓	
C	✓	✓		✓	✓	✓
D	✓	✓	✓	✓	✓	

2.14 The study concluded that package options A and B were the most deliverable, both of these focusing upon demand management measures and improved intra-urban bus services, with the addition of improved sustainable links based upon East-West Rail within package option B.

2.15 However, the report also concluded that all options had merit and were worth investigating in further detail.

2.16 The recommendations contained within these studies provided an initial evidence base used to support strategic level schemes and transport measures in the SEMLEP area.

2.17 The next sections of this strategy look to validate the findings of these previous stages of work by:

- Reviewing recent changes in development assumptions and any changes in planned and delivered levels of transport infrastructure; and
- Providing a further high level evidence base in terms of transport demands, predicted areas of congestion, road safety and accessibility.

2.18 This review and evidence base both confirms the relevance of the previous work undertaken and provides further support to the need for the priority transport schemes promoted through the Strategic Economic Plan for the South East Midlands.

3 Review of Planned Growth and Development

INTRODUCTION

3.1 The previous study work, outlined in **Section 2** was developed to support the growth aspirations associated with the MKSM area. However, since the time at which these reports were prepared there have been a number of changes in the location and quantum of planned development. The latest published information on the location and number of new homes and jobs across the SEMLEP area was collated in mid 2013 to inform the SEMLEP Infrastructure Strategy published in October 2013, with a number of further changes in the planned level and distribution of growth being reflected in the Joint Core Strategies for West and North Northamptonshire.

Changes in predicted development pipeline

3.2 In order to review the degree to which the assumptions, identified challenges and proposed interventions identified within the previous study work remains relevant, a comparative review was carried out to summarise changes resulting from the preparation of new adopted or emerging local plans, development frameworks and joint core strategies within the SEMLEP area. At the time of preparing this report, in a number of cases the latest development assumptions are within emerging documents and as a result the latest development figures have been provided directly by the relevant planning authorities. **Appendix A** provides a summary of levels of housing development and assumed job growth considered within this strategy.

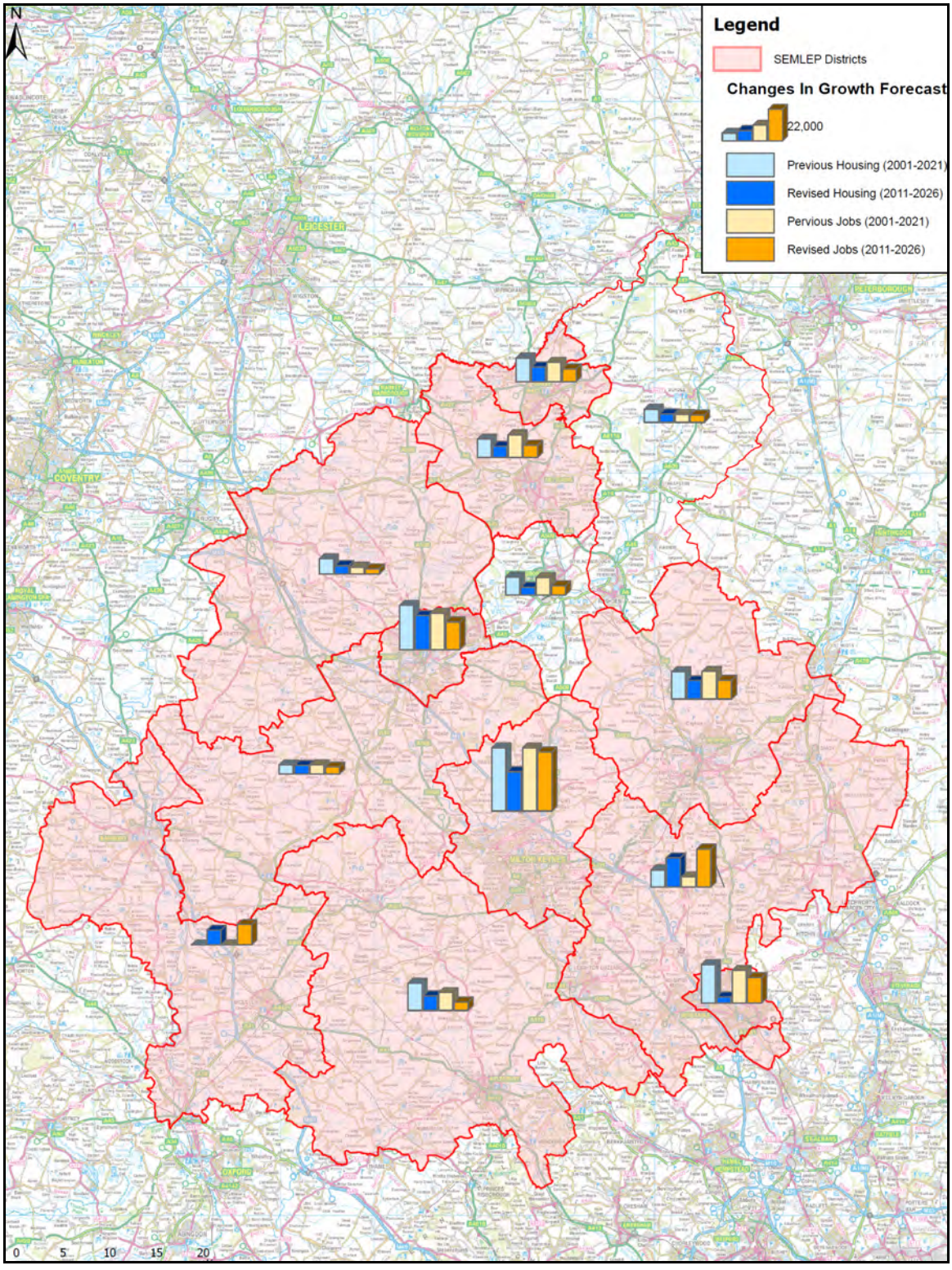
3.3 The extent of the study area has also changed since the previous study work, with Wellingborough and East Northamptonshire, which were formerly within the MKSM sub-region falling outside of the SEMLEP area. To the south-west, Cherwell District Council now forms part of the SEMLEP area, (previously having fallen outside of the MKSM area). The local authority structures to the south-east of the SEMLEP area have also changed, with the formation of Bedford and Central Bedfordshire as unitary authorities.

3.4 The time period covered by this study is also shorter (in terms of development period) than that considered within the MKSM studies (which reviewed the period 2001-2021), with this Strategy covering the development period 2011-2026, providing a forecast within the planning policy horizon of each of the constituent local authorities and allowing some consideration of

longer term schemes outside the timeframe of the current SEP. As a result it is not possible to provide a 'like-for-like' comparison of expected development. However, **Figure 3** on the following page provides a general overview of the main changes in development predicted across the South East Midlands.

3.5 In addition to the expected changes in housing and employment development, in late 2012, the operator at London Luton Airport submitted a planning application to the Borough Council for airport development to increase passenger throughput at the airport to 18million passengers per annum (mppa) from its current capacity of around 12mppa. This has the potential to generate significant local and wider economic benefits, but will also bring its own transport challenges to the south of the SEMLEP area, with improved access to and from the airport being key to enabling this level of growth.

Figure 3 - Changes in planned development



3.6 In general terms, whilst the levels of predicted development for the South East Midlands remain high, they are still at slightly reduced levels across much of the area when compared to the very challenging growth targets for the MKSM sub-region. The following are considered to be the main key areas of interest:

- There is a lower level of overall housing and jobs growth expected in both North and West Northamptonshire;
- The balance of development across Bedford, Central Bedfordshire and Luton has altered between the areas (largely due to changes in administrative boundaries and the abandonment of proposals for a Joint Core Strategy in Luton and the former South Bedfordshire District;
- Milton Keynes targets for both housing and jobs have remained consistently high; and
- In Cherwell District overall targets for growth and development have increased following a review of previous planned allocations.

RELATIONSHIP TO PREVIOUS STUDY WORK

3.7 The general balance of planned growth and development across the South East Midlands has not changed (overall) significantly since the time of the MKSM studies, with Milton Keynes and Northampton planning for the highest concentrations of housing and jobs growth and with the development across the combined Bedford, Central Bedfordshire and Luton areas remaining relatively consistent with previous levels of planned growth (when considered cumulatively).

3.8 To a large degree the areas which have changed accord with the findings of the previous MKSM study work, i.e. that the areas identified as having the greatest potential to deliver future growth (Bedford, Dunstable, Houghton Regis, Luton and Milton Keynes) have retained higher levels of planned development, with other areas seeing a planned reduction.

3.9 As such the main findings of the previous MKSM work are expected to largely remain relevant when considering the future strategic transport challenges and opportunities faced by the SEMLEP area.

CHANGES TO INFRASTRUCTURE

3.10 In addition to changes to the planned location and quantum of growth since the preparation of the previous MKSM reports, there have also been changes in the position regarding key areas of transport infrastructure, in particular:

- Completion of works on the Luton to Dunstable guided busway;
- Completion of improvement works to Junction 10a of the M1;
- The completion of the A421 improvements between Bedford and junction 13 of the M1;
- Improvement works to the A14, providing widening between J7 and J9 passing Kettering;
- Improvement works to the Junction 19 of the M1;
- Confirmation of necessary permissions to construct the proposed A5/M1 link;
- Proposals for introducing Smart Motorways between J13 and J19 of the M1 as a declared 'pipeline' project by the Highways Agency; and
- The latest proposals for the central and western sections of East-West Rail.

4 Policy Basis

INTRODUCTION

4.1 In order to ensure that transport schemes promoted through the SEP are those which most closely support the strategic policy objectives of the SEMLEP, the South East Midlands Local Transport Board and the constituent local authorities which make up the SEMLEP area, a reviews of the main policy objectives relevant to transport planning and the delivery of growth was carried out. The review identified the main shared objectives contained within:

- The developing Strategic Economic Plan for the South East Midlands;
- The Priorities identified for the South East Midlands Local Transport Board; and
- The latest Local Transport Plans, Local Plans and Core Strategies for the constituent authorities.

4.2 The policy review consisted of three main stages, with the aim of identifying common areas in terms of strategic direction, with the three stages detailed in the figures on the following pages.

- **Figure 4** provides a summary of the number of times specific policy objectives are referred to within the Local Transport Plans and Core Strategies / Local Plans of Local Authorities within the SEMLEP area.
- **Figure 5** groups these objectives under logical shared headings, where the objectives have shared overarching goals (for example objectives related to encouraging healthier travel or economic development).
- **Figure 6** further refines these groupings into 4 main headings (plus value for money and deliverability) and identifies how these relate to the strategic objectives of both the emerging South East Midlands SEP and the South East Midlands Local Transport Board.

4.3 This process provides a series of main policy objectives that can then be used to assess the strategic fit of proposed transport schemes, which relate to both the sub-regional strategic objectives of the SEMLEP and the local strategic objectives of the local authorities.

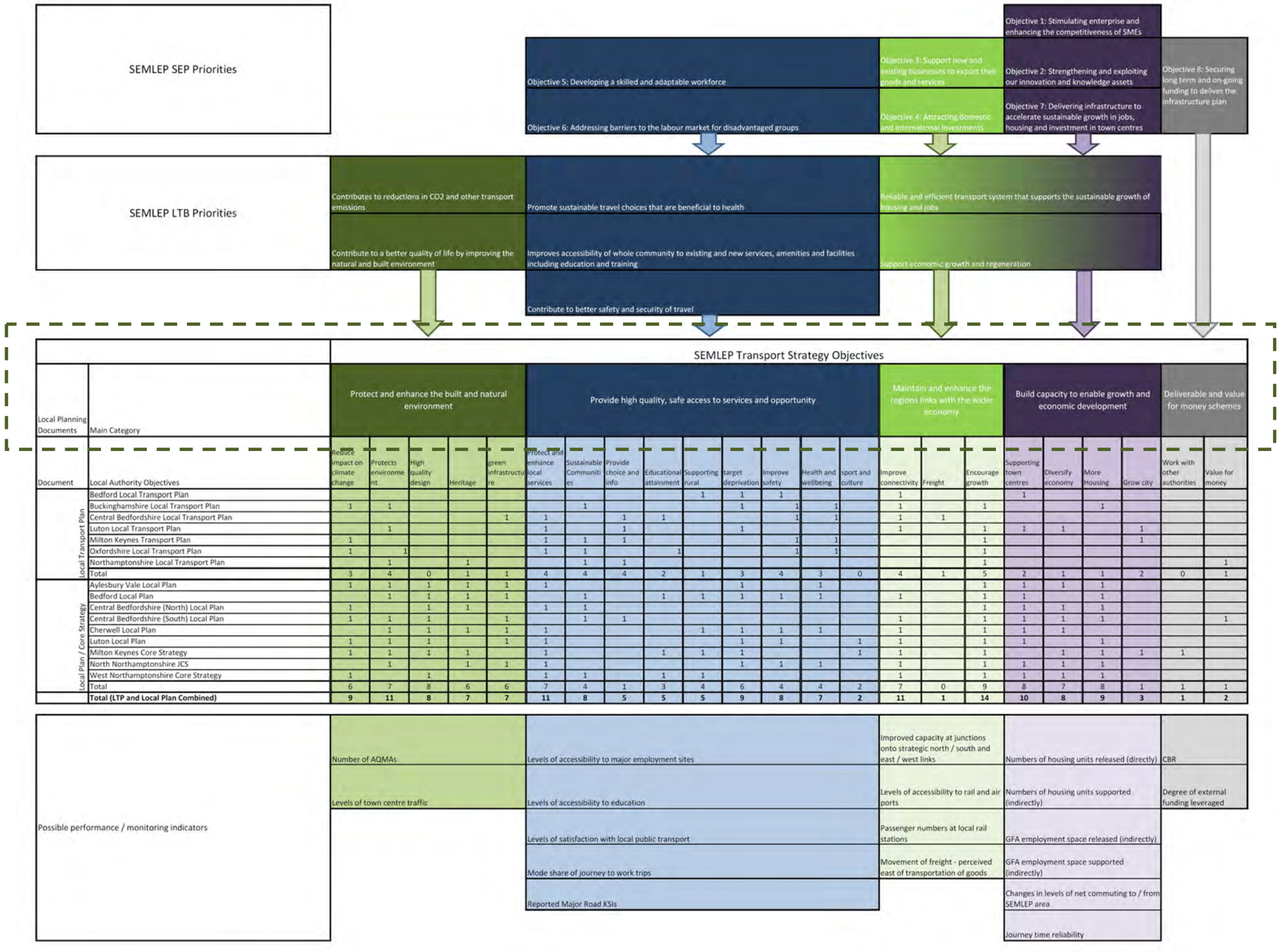
Figure 4 – Policy Review (First Sift)

Document	Authority	Reduce impact on climate change	Protect and enhance local services	Encourage growth	Sustainable Communities	Value for money	Protects environment	Provide choice and info	Improve connectivity	Supporting town centres	Diversify economy	Educational attainment	Supporting rural	High quality design	More Housing	Grow city	Work with other authorities	Heritage	green infrastructure	target deprivation	sport and culture	Improve safety	health and well being	comms infrastructure	Freight
Local Transport Plan	Bedford Local Transport Plan								1	1			1							1		1			
	Buckinghamshire Local Travel Plan	1		1	1		1		1						1					1		1	1		
	Central Bedfordshire Local Transport Plan		1					1	1			1							1			1	1		1
	Luton Local Transport Plan		1	1			1	1	1	1	1					1				1					
	Milton Keynes Transport Plan	1	1	1	1			1								1						1	1		
	Oxfordshire Local Transport Plan	1	1	1	1		1		1			1										1	1		
	Northamptonshire Transport Plan			1	1	1	1	1										1							
	Total	3	4	5	4	1	4	4	5	2	1	2	1	0	1	2	0	1	1	3	0	5	4	0	1
Local Plan / Core Strategy	Aylesbury Vale Local Plan	1	1	1			1			1	1			1	1			1	1	1			1		
	Bedford Local Plan			1	1		1		1	1		1	1	1	1			1	1	1		1	1		
	Central Bedfordshire (North) Local Plan	1	1	1	1					1	1			1	1			1							
	Central Bedfordshire (South) Local Plan	1		1	1	1	1	1	1	1	1			1	1				1						
	Cherwell Local Plan		1	1			1		1	1	1		1	1				1	1	1		1	1		
	Luton Local Plan	1	1	1			1		1	1				1	1				1	1	1	1			
	Milton Keynes Core Strategy	1	1	1			1		1		1	1	1	1	1	1	1	1		1	1				
	North Northamptonshire JCS		1	1			1		1	1	1				1			1	1	1		1	1		
	West Northamptonshire Core Strategy	1	1	1	1				1	1	1	1	1	1	1										
	Total	6	7	9	4	1	7	1	7	8	7	3	4	8	8	1	1	6	6	6	2	4	4	0	0
	Total (LTP and Local Plan Combined)	**9**	**11**	**14**	**8**	**2**	**11**	**5**	**12**	**10**	**8**	**5**	**5**	**8**	**9**	**3**	**1**	**7**	**7**	**9**	**2**	**9**	**8**	**0**	**1**
Other	South Northamptonshire Settlements and Development Plan	1	1	1	1				1	1	1	1	1	1	1			1	1						
	Daventry settlements and countryside local plan	1		1			1	1		1			1	1	1			1					1	1	
	Total	2	1	2	1	0	1	1	1	2	1	1	2	2	2	0	0	2	1	0	0	0	1	1	0

Figure 5 – Policy Review (Second Sift)

	Main Category	A better built and natural environment	Access to services and opportunity	Growth and economy	Access to services and opportunity	VfM	A better built and natural environment	Access to services and opportunity	Access to services and opportunity	Growth and economy	Growth and economy	Access to services and opportunity	Access to services and opportunity	A better built and natural environment	Growth and economy	Growth and economy	Work with other authorities	A better built and natural environment	A better built and natural environment	Access to services and opportunity	Access to services and opportunity / Health and wellbeing	Health and wellbeing	Health and wellbeing	Growth and ecomomy / Access to services and opportunity	Growth and economy
Document	Authority	Reduce impact on climate change	Protect and enhance local services	Encourage growth	Sustainable Communities	Value for money	Protects environment	Provide choice and info	Improve connectivity	Supporting town centres	Diversify economy	Educational attainment	Supporting rural	High quality design	More Housing	Grow city	Work with other authorities	Heritage	green infrastructure	target deprivation	sport and culture	Improve safety	Health and wellbeing	comms infrastructure	Freight
Local Transport Plan	Bedford Local Transport Plan								1	1			1							1		1			
	Buckinghamshire Local Travel Plan	1		1	1		1		1						1					1		1	1		
	Central Bedfordshire Local Transport Plan		1					1	1			1							1			1	1		1
	Luton Local Transport Plan		1	1			1	1	1	1						1				1					
	Milton Keynes Transport Plan	1	1	1	1			1								1						1	1		
	Oxfordshire Local Transport Plan	1	1	1	1		1		1			1										1	1		
	Northamptonshire Transport Plan			1	1	1	1	1										1							
	Total	3	4	5	4	1	4	4	5	2	1	2	1	0	1	2	0	1	1	3	0	5	4	0	1
Local Plan / Core Strategy	Aylesbury Vale Local Plan	1	1	1			1			1	1			1	1			1	1	1			1		
	Bedford Local Plan			1	1		1		1	1		1	1	1	1			1	1	1		1	1		
	Central Bedfordshire (North) Local Plan	1	1	1	1					1	1			1	1			1							
	Central Bedfordshire (South) Local Plan	1		1	1	1	1	1	1	1	1			1	1				1						
	Cherwell Local Plan		1	1			1		1	1	1		1	1				1	1	1		1	1		
	Luton Local Plan	1	1	1			1		1	1				1	1				1	1	1	1			
	Milton Keynes Core Strategy	1	1	1			1		1		1	1	1	1	1	1	1	1		1	1				
	North Northamptonshire JCS		1	1			1		1	1	1				1			1	1	1		1	1		
	West Northamptonshire Core Strategy	1	1	1	1				1	1	1	1	1	1	1										
	Total	6	7	9	4	1	7	1	7	8	7	3	4	8	8	1	1	6	6	6	2	4	4	0	0
	Total (LTP and Local Plan Combined)	**9**	**11**	**14**	**8**	**2**	**11**	**5**	**12**	**10**	**8**	**5**	**5**	**8**	**9**	**3**	**1**	**7**	**7**	**9**	**2**	**9**	**8**	**0**	**1**
Other	South Northamptonshire Settlements and Development Plan	1	1	1	1				1	1	1	1	1	1	1			1	1						
	Daventry settlements and countryside local plan	1		1			1	1		1			1	1	1			1					1	1	
	Total	2	1	2	1	0	1	1	1	2	1	1	2	2	2	0	0	2	1	0	0	0	1	1	0

Figure 6 – Policy Review (Final Sift)



4.4 This policy synthesis exercise identified 4 main shared objectives which provide a suitable summary of the strategic goals common to both the SEMLEP area and to the constituent local transport and planning authorities, detailed below:

- **Protect and enhance the built and natural environment** – this overarching objective covers the shared goals related to the environment, climate change, heritage and green infrastructure.
- **Provide high quality, safe access to services and opportunity** – the second overarching objective covers those goals related to promoting health and wellbeing, sustainable local travel, access to local services and educational opportunity and attainment.
- **Maintain and enhance the regions links with the wider economy** – this objective is the first of two objectives related to economic growth and development and is specifically focused upon encouraging growth of the SEMLEP area as a whole, promoting wider connectivity and in particular upon the efficient management and movement of freight.
- **Build capacity to enable growth and economic development** – the second economic objective is related more closely to supporting the economies of local centres and releasing and enabling specific development sites.

5 Existing and future transport conditions in the SEMLEP area

INTRODUCTION

5.1 In order to ensure that schemes put forward for funding and promoted through the SEP are appropriate to deliver the main objectives of the SEP and the supporting Transport Strategy, a range of initial evidence sources have been developed and interrogated.

EVIDENCE BASE

5.2 The following main data sources were used to develop a high level evidence base:

Existing levels of congestion

5.3 A high level review of existing levels of congestion was carried out using DfT AADF (Average Annual Daily Flow) data. This flow information was then related to the estimated CRF (Congestion Reference Flow) value for each of the major links within the study area, calculated based upon average carriageway widths and numbers of lanes, giving an estimated stress level for each link. The summary daily traffic flow and stress plots for the strategic SEMLEP road network are provided in **Figure 7** and **Figure 8**.

5.4 Based upon this high level review the current network is showing areas of link based stress in the following main locations:

- Large Sections of the M1 within the study area are shown to be experiencing link stress, although the implementation of the 'Smarter Motorways' improvement works to the south of Junction 13 of the M1 show areas where link stress is relieved by the availability of an additional usable lane during busy periods.
- Within the northern end of the study area the A43 between Northampton and Kettering is shown as subject to congestion, as are sections of the A45 to the east of Northampton.
- Within the eastern end of the study area the A6 between Luton and Bedford is shown as congested, as are sections of the A505.

- Within the southern end of the study area the A413 approaching Aylesbury is congested, whilst to the south-west the M40 and sections of the A41 passing Bicester are also shown as currently being subject to link stress.

5.5 It should be noted that this data only provides an overview of link stress for strategic movements and does not provide information on non strategic road congestion and/or where congestion is related to individual junctions. As such this only provides an overview of changes in potential travel demands and stresses on inter-urban routes, as junction capacity is often the determining factor in the capacity of links, particularly in urban areas where junctions may be closely spaced.

Figure 7 - Base AADT Flows (2011)

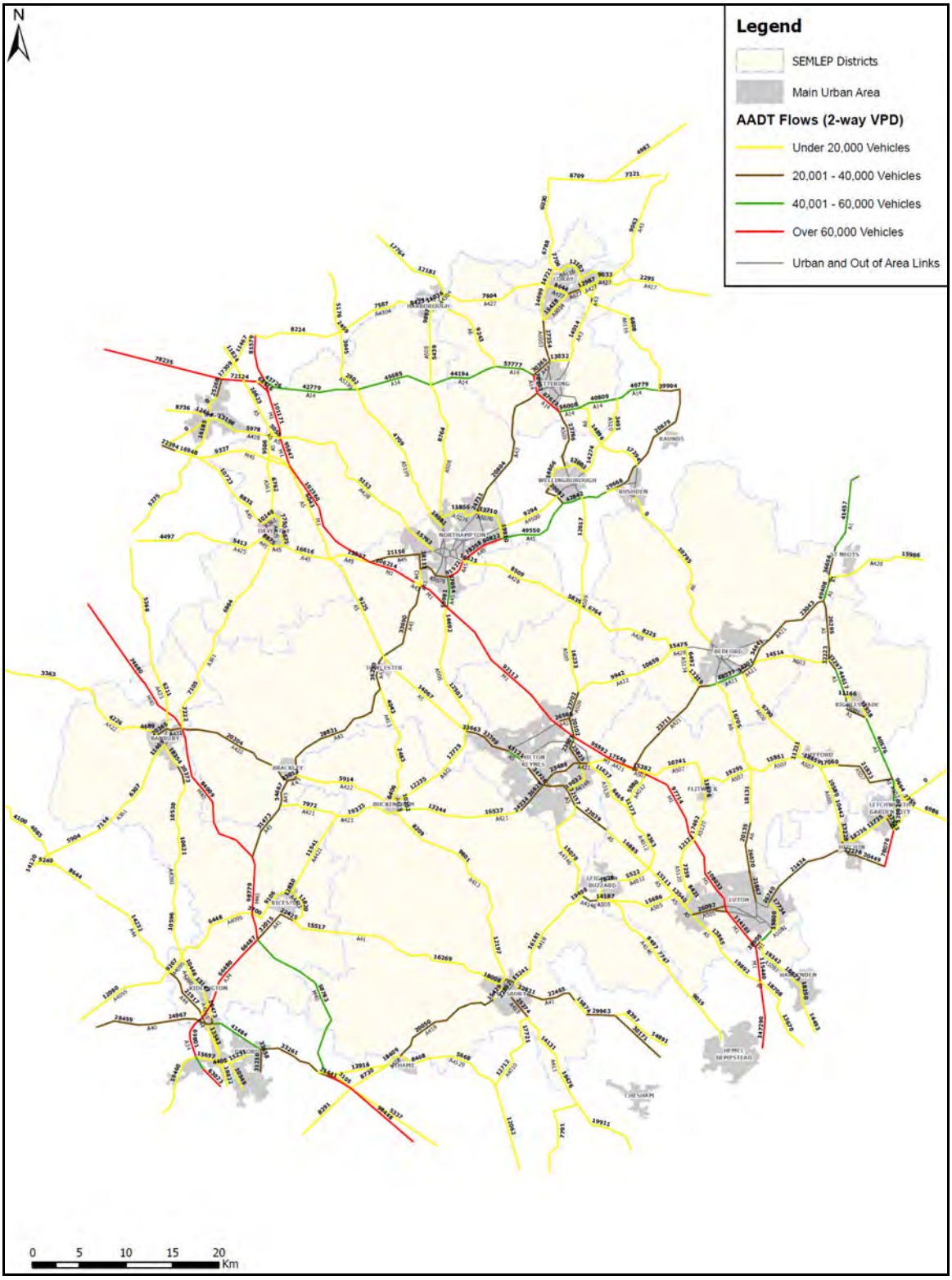
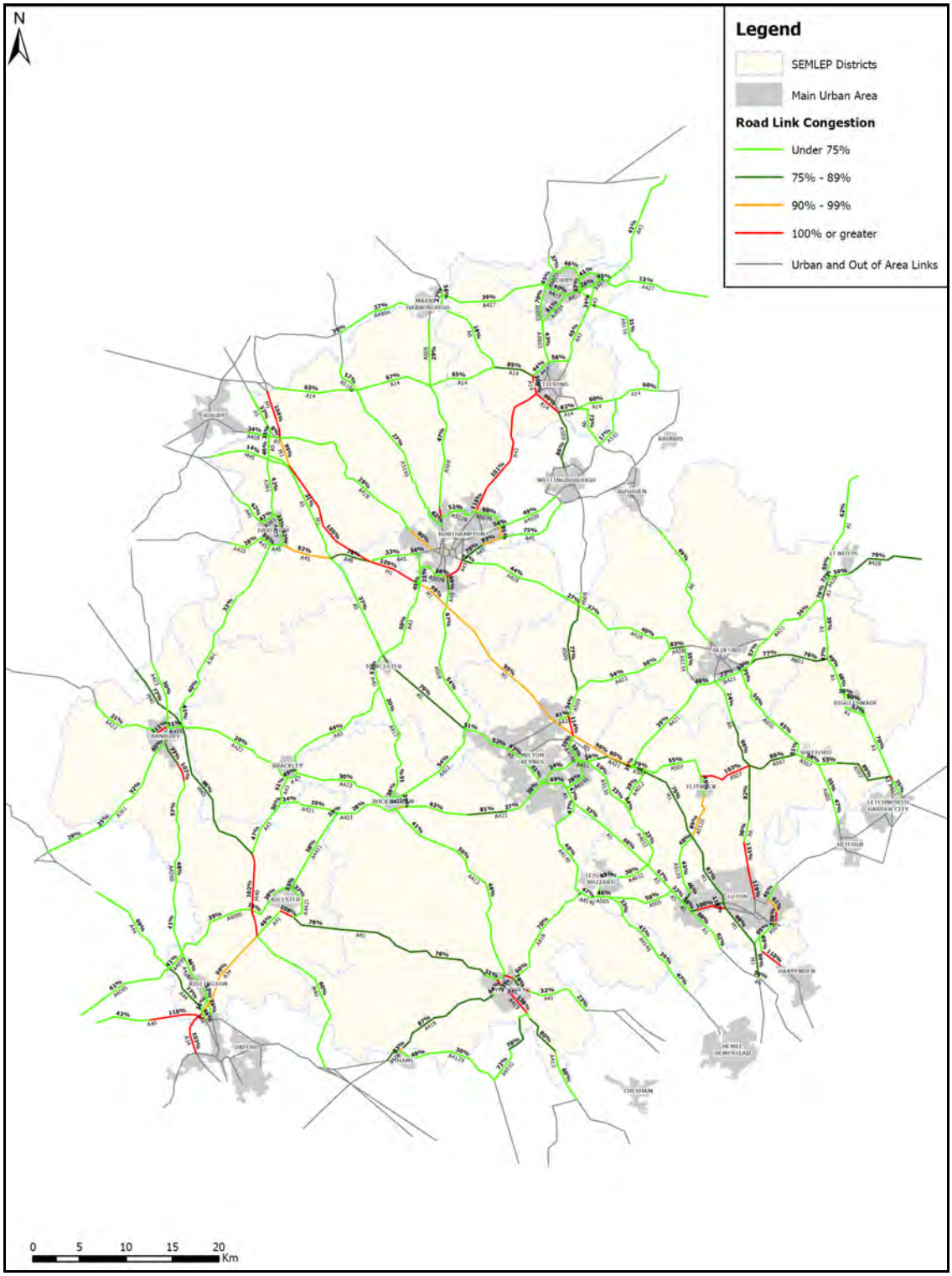


Figure 8 –2011 Network Stress (based upon Daily Flows)



Impacts of growth

5.6 Building upon the summary of the base traffic situation provided in **Figure 7**, an overview of the main expected additional traffic pressures arising from planned/expected levels of development (between 2010/11 and 2026) was then established. Traffic related to predicted pipeline development was predicted using a strategic level VISSIM network (consisting of Motorway and 'A' road networks across the SEMLEP area). Trip generation for new development was based upon standard TRICS rates for the main planned development uses (Housing, B1 Office, B2 Industrial and B8 Distribution), with trips over 5km distance assigned to the major road network. Trips of less than 5km were excluded on the basis these trips would largely use local roads or remain within individual urban areas.

5.7 This should not be viewed as a detailed modelling exercise, as the methodology used to generate an overview of potential travel demands is based upon employment and residential based distribution, (without different distribution assumptions for other daily trips) and as such is subject to a number of limitations (for example the potential to overestimate the number of longer distance trips outside of peak hours). However, this does give a good initial overview of the relative main demands for travel as a result of expected development to 2026 and therefore the main corridors where future traffic pressures could be expected. Further details of the trip generation and distribution methodology used are provided in **Appendix B**.

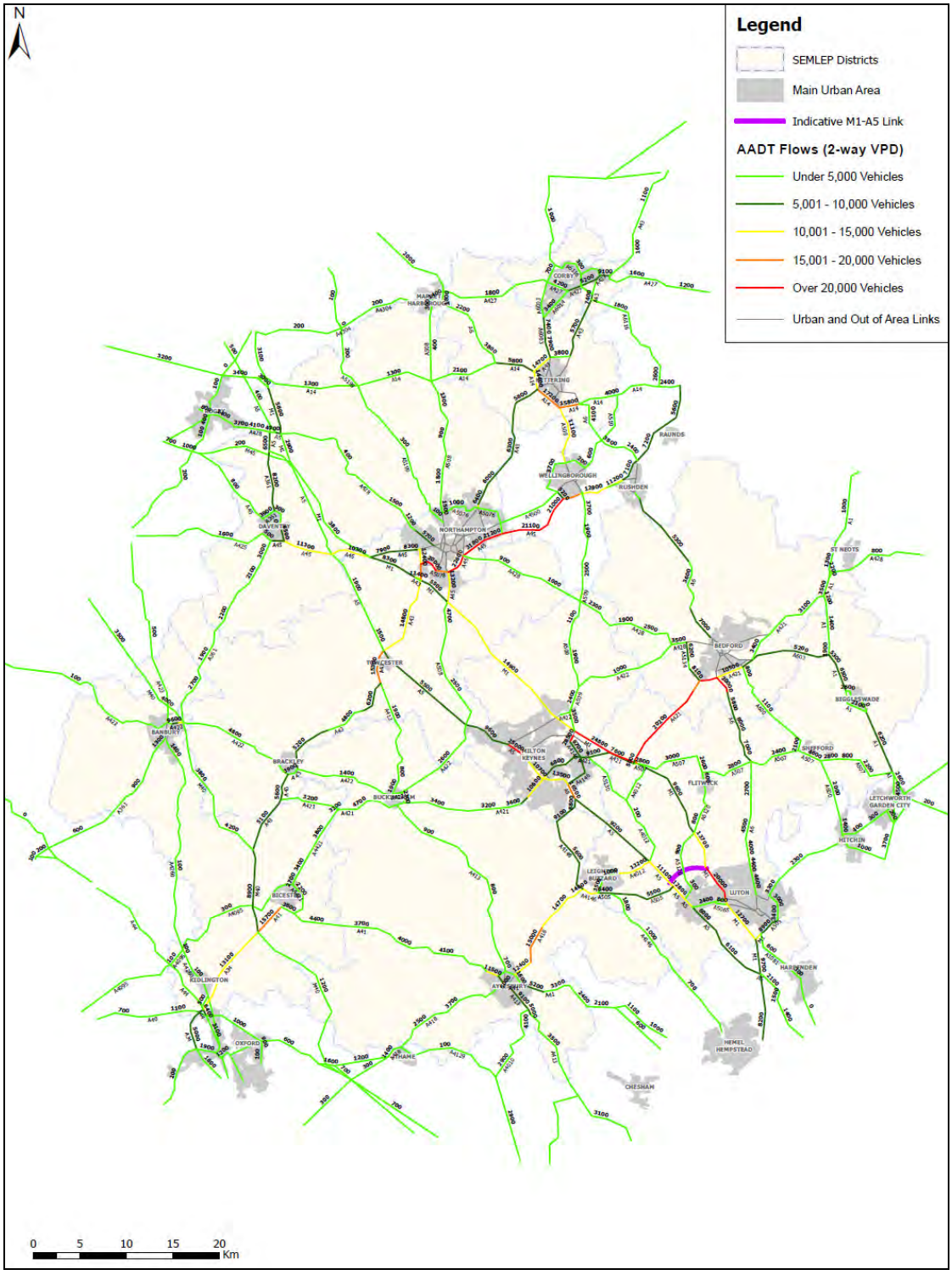
5.8 A plan summarising the main predicted traffic demands arising from planned levels of development across the SEMLEP area is provided in **Figure 9.**

5.9 Whilst demand for travel is spread across the SEMLEP area, as might be expected, there are specific routes where higher levels of travel demand are predicted as a result of significant clusters of development and/or areas where large individual employment and residential sites are predicted to generate specific inter-urban movements (for example movements between employment and housing developments in Bedford and Milton Keynes). The following links in particular are predicted to carry significant levels of new development related traffic:

- Sections of the M1, in particular between J13-J14;
- The A421 between Milton Keynes and Bedford;
- The A5 and the M1 to the north of Luton / Dunstable;
- The A505 between Luton and Dunstable;

- The A5 through Milton Keynes;
- The A41 south of Bicester;
- The A45 east of Northampton (to Wellingborough);
- The A43 north of Northampton (to Kettering);
- The A43 west of Towcester; and
- The A14 south of Kettering

Figure 9 – Development traffic growth (2011-2026)



Forecast congestion

5.10 A high level review of congestion by 2026, based upon the combined impacts of existing and planned development traffic was carried out, using the same methodology (i.e. stress levels based upon a comparison of traffic flows and CRF values), as was used for the Base Year assessment. This assessment assumed that no further infrastructure improvements are in place by 2026 aside from the committed A5-M1 link.

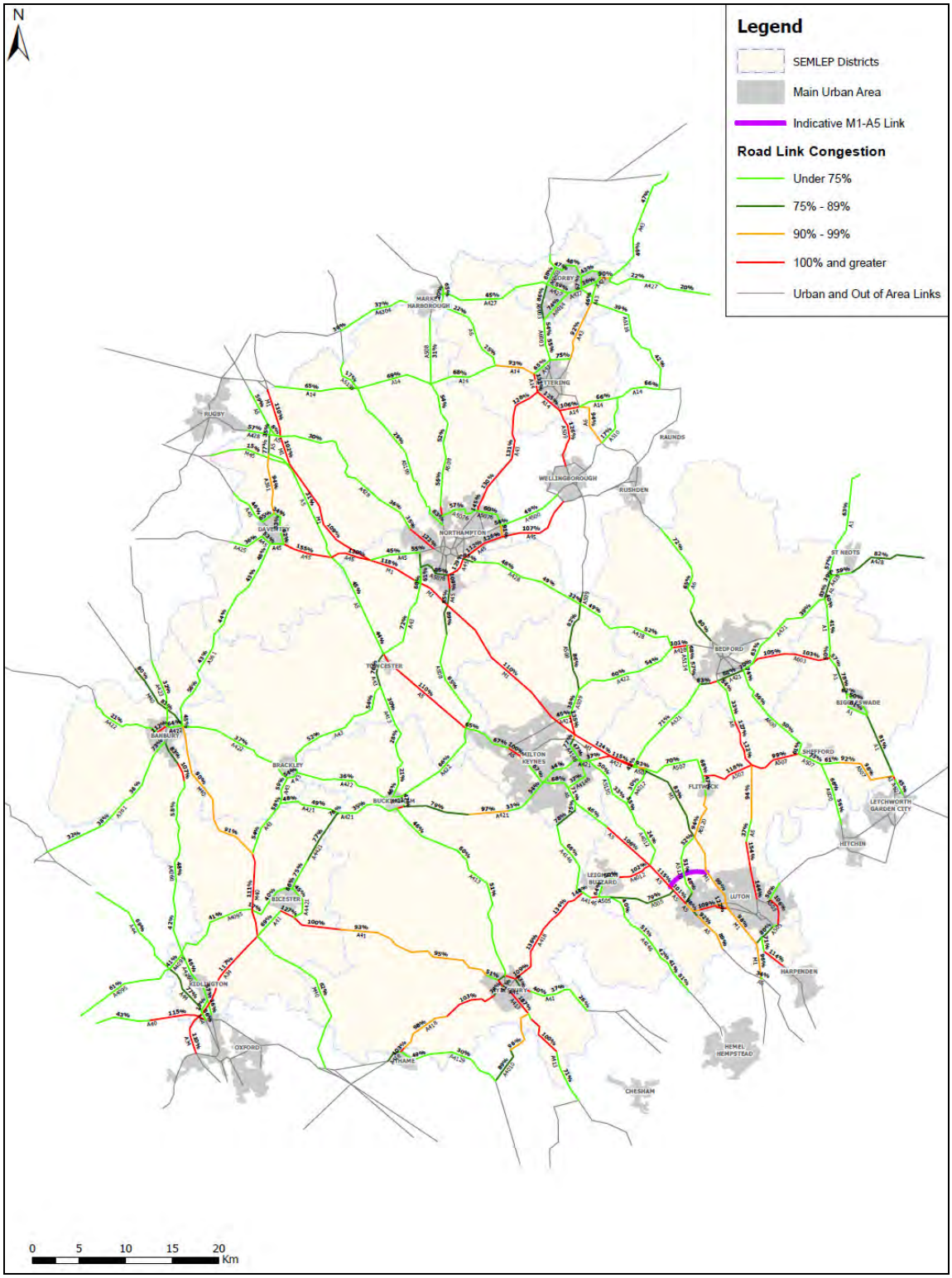
5.11 The summary stress plan for the forecast year is provided on the following page as **Figure 10**.

5.12 The summary plan shows the following areas of predicted network stress:

- Large sections of the M1 corridor within the study area are expected to be subject to increased levels of congestion by 2026;
- The A6 between Luton and Bedford (specifically the sections of single carriageway on the route);
- Sections of the A5 between Dunstable and Milton Keynes and between Milton Keynes and Towcester.
- The A421 (single carriageway section between Milton Keynes and Junction 13);
- The A45 (from Daventry to J16 M1);
- The A45 (east of Northampton to Wellingborough);
- The A43 (Northampton to Kettering);
- The A505 between Luton and Dunstable;
- The A418 and A413 through Aylesbury (and onwards to Leighton Buzzard); and
- The A34, A41 and M40 passing Bicester.

5.13 The A1 to the east of the study area is also starting to show signs of link stress in the forecast situation, with the expectation that additional development pressures outside of the SEMLEP area in the adjacent LEP areas to the east (and therefore not considered within this study) could be expected to further worsen expected congestion on this route.

Figure 10 - Forecast (2026) Network Stress (No assumed improvements other than A5-M1 link)



Injury accident statistics

5.14 An overview of road casualty statistics on the strategic road network was carried out, with accidents summarised in terms of road traffic accidents reported in the last 5 years resulting in an injury or fatality frequency per km for each major link in the study area (this excludes accident data for Buckinghamshire and Central Bedfordshire which was not available at the time of preparing the strategy).

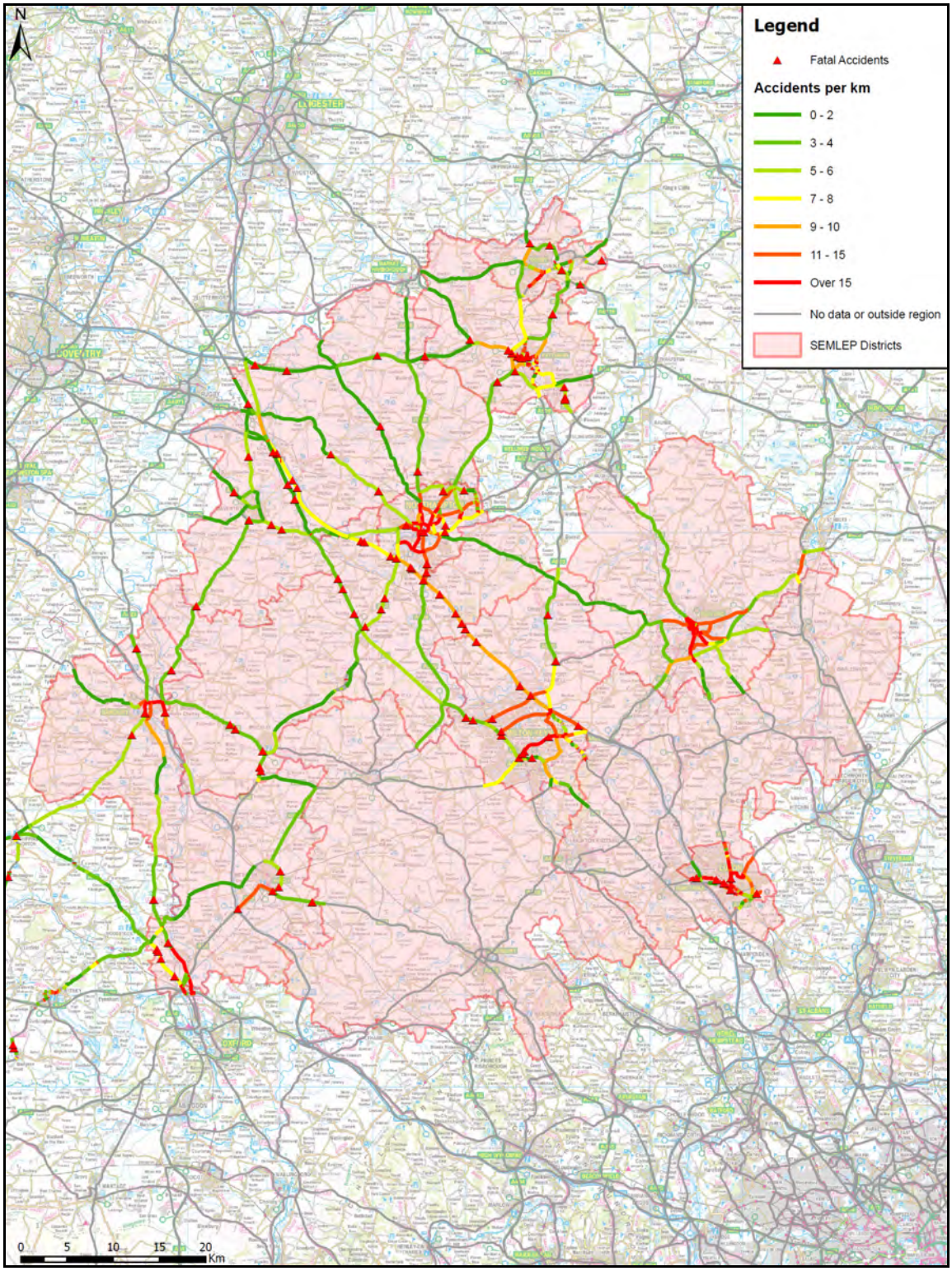
5.15 A plan providing a summary of the casualty information received from the SEMLEP area local authorities is provided as **Figure 11**.

5.16 As might be expected the highest numbers of casualties recorded on the strategic road network occur on urban sections of the network, where there are the greatest numbers of junctions in close proximity, (with most injury accidents occurring at junctions rather than on links). Of the urban routes the A4300 in Kettering appears to have a relatively high number of fatal accidents recorded on an urban 'A' road, whilst there are also clusters of fatal accidents on the A505 (Luton) and the A421 (Milton Keynes).

5.17 Outside of urban areas, the highest numbers of recorded injury accidents, (when considered on the basis of accidents resulting in injury or fatalities per KM) were at the following locations:

- A41 south of Bicester;
- M40 and A44 north of Oxford; and
- A43 north of Kettering

Figure 11 – Road traffic injury accident summary (last 5 years)



Accessibility to key destinations

5.18 An overview of the relative accessibility to major destinations including town centres and employment sites by all modes, based upon published DfT accessibility statistics was carried out.

5.19 **Figure 12** and **Figure 13** provide a summary of levels of access to town centres and employment sites by car and bus.

5.20 Generally the levels of public transport access to town centres are as might be expected, with the denser urban areas close to town centres having the best levels of access. In comparison a number of the rural areas surrounding Bedford and in Central Bedfordshire have lower relative levels of access to town centres, although the Sandy and Biggleswade areas show good levels of access due to the availability of access to these local centres.

5.21 There are also a number of locations where corridors proposed for improvement schemes within the SEP appear to have the potential to improve public transport journey times (and therefore improve accessibility), example routes being:

- The A45 / A4500 corridor between Daventry and Northampton
- The A421 corridor between Milton Keynes and Bedford
- The A43 between Towcester and Brackley

5.22 Public transport access to employment sites is generally more even across the South East Midlands LEP area, with a relatively limited number of isolated areas with access times of over 20 minutes. (However this is based upon the DfT's assumed numbers of total jobs in each area and as such may overestimate the access of more rural areas to the most concentrated areas of B class employment). The main areas showing lower levels of access include:

- Wards surrounding Leighton Buzzard (largely located to either side of the town off the A4146);
- Wards to the south of Daventry, located on the A361 corridor;
- Wards to the north and east of Buckingham; and
- Wards to the north-west of Towcester, (located off the A5)

Figure 12 - Public Transport Access to Town Centres

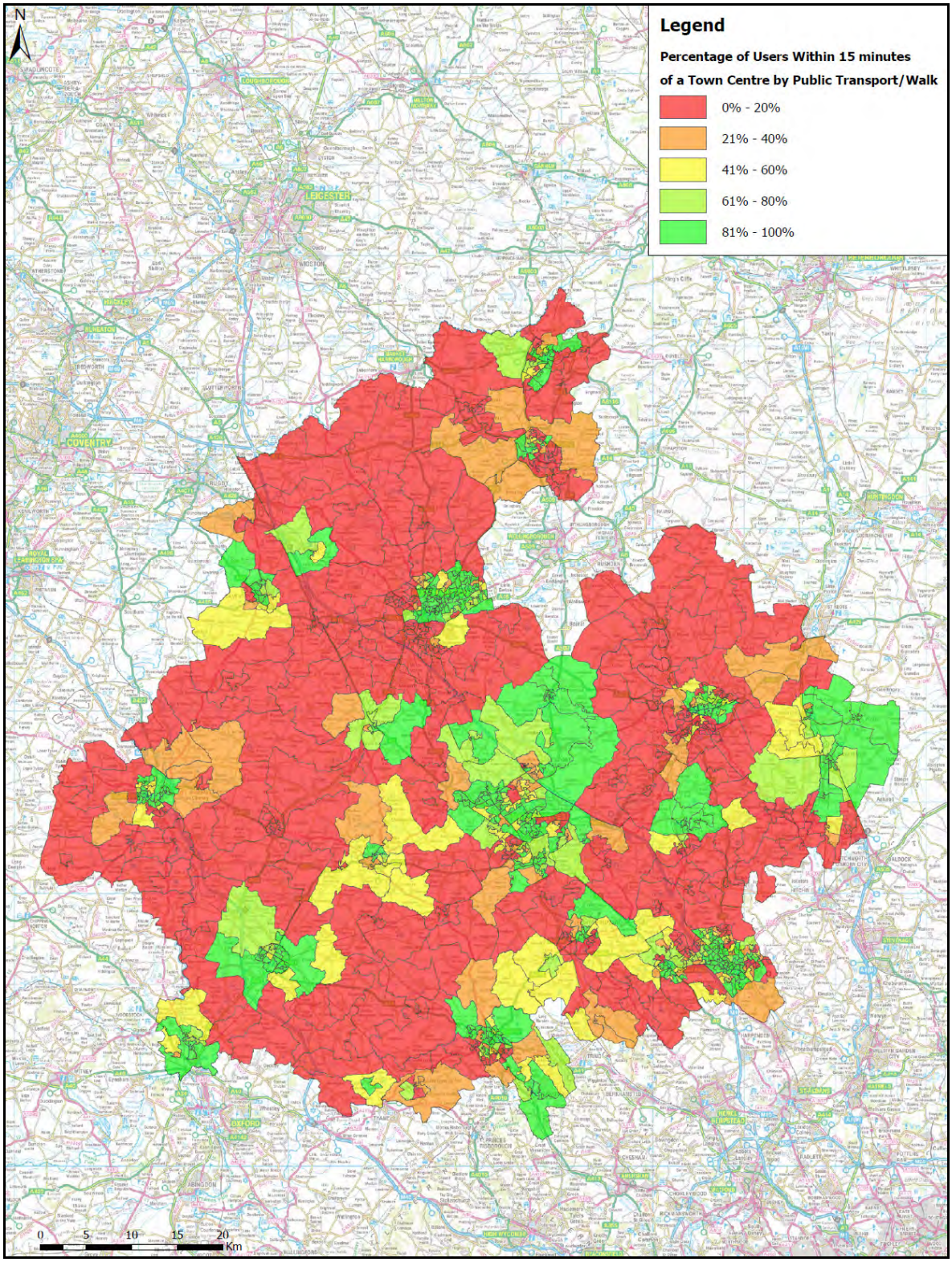
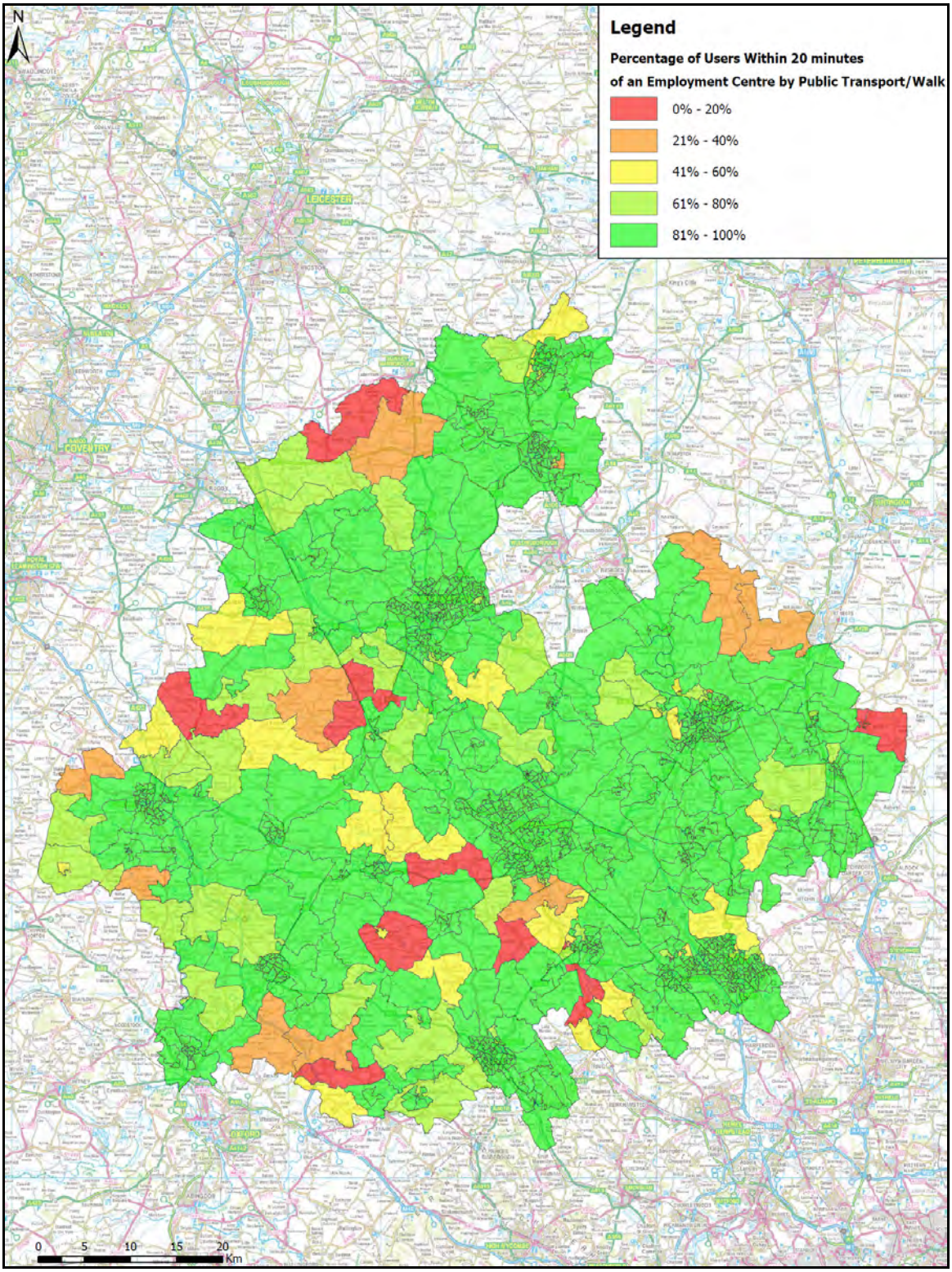


Figure 13 – Public Transport Access to Employment Centres



Access to strategic networks (road, rail and air)

5.23 Access to Airports by car varies across the SEMLEP area, with areas in the south-east benefiting from the proximity of London Luton airport. In the north-west of the area urban areas benefit from a reasonable level of proximity to Birmingham, whilst areas in the south of the area (including Bicester and Aylesbury) also reasonable levels of access due to better road links to Heathrow to the south-east.

5.24 Public transport access to airports across the area is largely determined by access to rail networks, with the greatest levels of access being in the areas immediately surrounding local rail hubs. As such areas such as Buckingham (and to a lesser degree Daventry) suffer poorer levels of access due to the lack of rail connectivity.

5.25 This pattern is therefore largely replicated when considering access to rail, with most of the main urban areas within SEMLEP (and the surrounding Hinterlands) enjoying a good level of access to local and longer distance rail. The exceptions are Buckingham and Daventry, which are the only two main urban centres with no direct access to rail.

6 Sustainable Travel and Smarter Choices

The case for Sustainable Transport within the SEP

6.1 Whilst a number of the major infrastructure schemes supported within the SEP are based upon releasing development sites and supporting inter-urban movements within the SEMLEP area, these schemes do not address the full range of new or existing demands for travel. The evidence review in **Section 5** identified a significant growth in demand for trips between the urban areas within SEMLEP, with the potential to be partially mitigated through the promotion of coordinated area-wide public transport. In addition a significant level of demand for shorter local trips was also identified, with associated scope to catered for these local trips trough the promotion of walking, cycling and public transport.

6.2 This section of the Strategy considers each of these areas in more detail and the potential for current and future schemes delivered through the SEP to support sustainable travel to, from and within the SEP area.

Potential demands for Intra-urban trips

6.3 Whilst a number of the major infrastructure schemes supported within the SEP are based upon supporting inter-urban movements within the SEMLEP area, these schemes do not address the full range of new or existing demands for travel. The majority of the planned development in housing and jobs up to 2026 is located within or on the periphery of existing urban centres, and a significant number of shorter distance trips could be expected to remain within existing urban areas (or between urban centres and their surrounding hinterlands).

6.4 This section of the strategy provides an overview of the level of potential demand for shorter distance journeys, which are expected to be catered for through a combination of local infrastructure schemes unlocking urban congestion hotspots and the promotion of sustainable transport and smarter choices measures.

6.5 As detailed in **Section 5** of this report, trips of less than 5.0km were excluded from the assessment of development impact on the strategic road network, based upon the expectation these trips would remain largely on the local road network. Trips less than 5.0km in length also have the realistic potential to be influenced by available local travel options, including walking, cycling and local public transport options.

6.6 In order to get a broad understanding of the numbers of shorter distance daily trips which could be undertaken by sustainable modes the numbers of trips estimated as being below 5.0km was summarised, by district, in **Table 4.**

Table 4 – Predicted development trips under 5.0km (by 2026)

District	Residential Daily Arrivals	Residential Daily Departures	Total 2 Way
Aylesbury Vale	10480	10991	21471
Bedford	17725	18591	36316
Central Bedfordshire	10911	11444	22355
Luton	9011	9450	18461
Cherwell	11960	12544	24503
Corby	17899	18773	36673
Daventry	5362	5624	10986
Kettering	9349	9806	19155
Milton Keynes	35668	37410	73078
Northampton	37818	39664	77482
South Northamptonshire	4243	4450	8694
Total	170426	178747	349174

6.7 It can be seen that the planned levels of growth and development in the SEMLEP area could be expected to result in a considerable level of demand for shorter distance journeys, which could be catered for by locally based sustainable transport or smarter choices projects.

6.8 In the case of some districts, where there are significant numbers of locally planned or available jobs, such as Bedford, Corby, Luton and Milton Keynes theses shorter trips could form in the region of 50% of all peak hour journeys and therefore any measures focused on reducing car use for these shorter journeys could have a significant impact upon the operation of the road network in the main urban areas within SEMLEP.

Potential demand for Inter-urban Trips

6.9 The review of predicted travel demands for planned growth in the South East Midlands LEP area identified a strong demand for movements between main urban centres. These movements being split between movements contained fully within the SEMLEP area and those with an origin or destination outside of the area.

6.10 With regards to inter-urban rail movements, the main current thinking available is contained within Network Rail's long term planning reports (Market Studies), which identify particular routes proposed for rail investment, particularly in areas where this investment is expected to result in economic benefits being achieved. A review of the relevant study documents is provided in **Section 7** of this Strategy Document, with the main areas of Inter-Urban rail demand identified for potential future investment summarised below:

- Luton – Milton Keynes – Northampton – Birmingham
- Milton Keynes – Oxford (via Bletchley and Bicester)

6.11 With regards to bus based provision for inter-urban travel, previous study work for the MKSM study area identified the need for a stronger inter-urban public transport offer to help mitigate the impacts of planned growth whist the evidence review contained in **Section 5** also identified considerable predicted demand for travel between the main urban centres within the SEMLEP area.

6.12 The promotion of attractive sustainable transport alternatives to the private car for inter-urban travel will help to minimise the impacts of development related traffic on the strategic road network within the SEMLEP area and therefore limit the predicted increases in network stress.

6.13 The review of accessibility in **Section 5** of this report also identifying the importance of inter-urban bus services, particularly to those areas with limited access to rail. The review of relative levels of accessibility also identified a number of corridors where improvements could result in an improved level of public transport journey time reliability and accessibility, (example routes including the A421 and A45).

The role of Sustainable Transport in the SEMLEP area

6.14 Whilst the priority schemes promoted through the SEP have a strong focus upon enabling development, and in particular unlocking large residential and employment areas within the SEMLEP area, there are also a number of inter-relationships with the wider promotion of Sustainable Travel, which have been considered in the scheme review carried out in **Section 8** of the Strategy.

Highway Schemes

6.15 In the case of major road schemes, in addition to the gains in capacity, congestion reduction and journey time improvements which could be expected, there is also potential for public transport links between areas to benefit from improved route operating times and journey reliability.

6.16 Road schemes also have the potential to offer secondary benefits by releasing capacity which can subsequently be used to improve local sustainable transport links. For example schemes proposed through the SEP which will help remove traffic from currently congested urban areas provide the opportunity to deliver town centre improvements which benefit sustainable modes by allowing the reallocation of created road space (whilst also providing environmental benefits including reduced noise and air pollution benefiting pedestrians and cyclists).

Public Transport Infrastructure

6.17 The SEP includes schemes which provide an improved level of access to transport hubs, including the proposed improvement works at Bletchley Rail Station, which will help to maximise the potential benefits arising from the implementation of East-West Rail. The delivery of new or improved transport hubs has the potential to both encourage increased levels of sustainable trip making and to promote an improved level of interchange between modes.

6.18 In the case of larger urban areas, such as Milton Keynes, improved interchange will provide an improved level of commuter access to and from employment areas via rail whilst also providing an improved business gateway to the area, whilst for some of the smaller market towns improved interchange provides a suitable hub from which more dispersed local public transport journeys can be undertaken. The importance of interchange times is further highlighted in the review of current strategic rail long term planning in **Section 7** of this Strategy, in which the journey times of less than 60 minutes are considered to represent a reasonable threshold for encouraging economic growth in larger regional centres. Time savings due to an improved level of interchange have the potential to contribute towards reducing total journey times below this threshold.

Walking and Cycling Schemes

6.19 As previously identified, a significant number of shorter distance trips can be expected as a result of the levels of planned growth and development across the SEMLEP area. Whilst local public transport can be expected to cater for a proportion of these trips, walking and cycling remain key modes for shorter distance trips, with recent census data suggesting considerable scope for encouraging an increase in walking and cycling for these shorter distance trips.

6.20 The current combined walking and cycling modal share for Milton Keynes (as an overall Unitary Authority) journey to work trips was recorded as being 11.14% in the 2011 census, with the combined walking and cycling modal share for Luton being recorded as 15.04%, whilst the review of potential shorter distance trips in **Table 4** identifies the scope for nearly half of trips to be less than 5.0km (and therefore have potential for transfer to sustainable modes).

Smarter Choices

6.21 Whist the delivery of physical improvements can provide the appropriate facilities, capacity and connections to enable increased levels of sustainable trip making, the promotion of these modal options also forms an important part of any coordinated transport strategy.

6.22 The SEP includes proposals to provide further funding to the successful Central Bedfordshire Smarter Routes to employment project to cover a wider geographical area, covering areas of Luton, Dunstable and Houghton Regis.

6.23 The addition of a smarter choices element to the overall strategy provides a means of coordinating the benefits which can be achieved via investment in capital and revenue transport projects. In particular smarter choices schemes can highlight available travel options and maximise the numbers of users (and therefore the associated scheme benefits).

Summary

6.24 As such it is clear that the transport strategy for the SEMLEP area needs to provide a balance of scheme types, recognising that whilst major infrastructure schemes have a vital role to play in unlocking growth and development, sustainable transport measures, whilst harder to relate to any one specific development site, should also form part of any overall strategy.

6.25 In particular there is scope for the integration of the larger capital projects promoted through the SEP to coordinate with locally or jointly delivered sustainable transport and smarter choices projects, in particular related to the latest round of Local Sustainable Transport Fund projects.

6.26 The 'Smarter Routes to Employment' project delivered by Central Bedfordshire Council, and proposed for further support through the SEP provides one example of the delivery of projects promoting sustainable travel with the potential for replication and up-scaling across the SEMLEP area.

6.27 Projects being reviewed by the SEMLEP for potential delivery in the longer term also include schemes with a significant sustainable transport element, including the potential for an improved level of inter-urban public transport connectivity. This builds upon the initial aspirations identified in the MKSM work (and summarised in **Section 2** of this Strategy) and is also considered in more detail in **Section 9**, which discusses potential future projects.

7 Integration with other National, Regional and Local Schemes

INTRODUCTION

7.1 The SEMLEP area includes a number of national and regional transport networks. The following section provides a summary of the strategic investment plans and road and rail studies covering these networks.

NATIONAL INFRASTRUCTURE PLAN

7.2 In 2013 the Government published a plan outlining the United Kingdom's infrastructure needs now and in the future. This included the publishing of a infrastructure pipeline including a number of transport infrastructure schemes relevant to the SEMLEP area:

- A14 Kettering Bypass;
- A5 – M1 Link Road;
- M1 / M6 Junction Improvement Scheme; and
- M1 J13 – 19 Managed Motorways (now Smart Motorways).

HIGHWAYS AGENCY ROUTE STRATEGIES

7.3 The SEMLEP region sits at the centre of a number of nationally important transport routes, and as a result is included within a number of the draft Route Based Strategies prepared by the Highways Agency, including the following:

- Felixstowe to Midlands;
- Solent to Midlands;
- London to Leeds;
- London to Scotland East; and
- London to Scotland West.

7.4 The Highways Agency are actively involved in the SEMLEP area, working with the LEP and the constituent Local Authorities on a range of major projects and studies to help enable economic growth and development, including improvements to the A14, the implementation of 'Smarter

Motorways' between junctions 10 and 13 of the M1, plans for the junction 11a onto the M1 and proposals for the A5 to M1 link road. The Route Based Strategies identify areas of further planned study and/or investment and have been taken into account when considering the potential for integration between projects. The main findings of these strategy documents relevant to the South East Midlands LEP area are summarised below.

Felixstowe to Midlands

7.5 The draft Felixstowe to Midlands Route Based Strategy was published in February 2014 and covers sections of M6, A14, A45, A421 and A428 and so is of particular importance to the SEMLEP area. The main functions of these routes are detailed within the reports as:

- Linking the East Coast ports to the Midlands;
- Forming part of a Trans European Network;
- Providing a major transport link between the Midlands and the East of England; and
- Operating as a Key Freight Link.

7.6 The Strategy Evidence report details the A14 as carrying a very high proportion of HGVs (up to 25% of all traffic) reflecting its role as a strategic freight route. Issues of delay and congestion along the corridor are expected to be exacerbated by significant levels of planned growth and development, with the A14 / M6 / M1 junction recognised as a particular congestion hotspot.

7.7 The A45 is particularly congested during peak periods and serves a high proportion of local commuting trips.

7.8 The A421 is both a link for major urban settlements and a local distributor and gateway to Bedford for the M1 and A1. The A1 Black Cat Junction is noted as an area of identified congestion and delay.

7.9 Two sections of the A45 bypassing Northampton are in the top 10 busiest sections on the route, whilst 4 sections of the A45 are also detailed as being within the ten least reliable journey time locations, (with 1 section of the A14, passing Kettering, also being one of the ten least reliable route sections).

7.10 Details of committed strategic road network enhancement schemes relevant to this route are provided in **Table 5** below.

Table 5 - Highways Agency SRN schemes 1

Location	Scheme Type	Completion Year	Anticipated Benefits
A45 Wilby Way Improvement	Pinch Point scheme – junction improvement	2015	Capacity and Safety
A14 Kettering	Major Scheme	2016	Enhance A14 between J7 and J9
M1 J19 Improvement	Major Scheme	2017	Improvements to Junction 19 of the M1
A1 / A421 'Black Cat' roundabout improvement	Pinch Point scheme – junction improvement	2015	Capacity and Safety

London to Scotland East

7.11 The London to Scotland East Route Based Strategy considers the main north south route through SEMLEP including the M1 and the parallel route on the A5. The section of the M1 to the south of Luton is included twice in the busiest 10 sections of the route (Junctions 9 – 10 in both directions). In addition the section of the M1 to the immediate south of the M1 (Junction 10 – 10a) is also the least reliable section of the M1 in the route strategy area, due to this being a relatively short spur between two roundabouts serving Luton Airport.

7.12 The strategy also details the majority of the M1 between Luton and Northampton being in the top 10% of recorded vehicle hours delay. The two main reasons for delay on this route cited by the Highways Agency are:

- Where routes pass through Urban Areas, for example the A5 through Towcester and Dunstable, which slows overall network speeds; and
- Where there is tension between longer distance (strategic) and local traffic, in particular Luton.

7.13 Committed schemes on this route are detailed in **Table 6**.

Table 6 - Highways Agency SRN schemes 2

Location	Scheme Type	Completion Year	Anticipated Benefits
M1 / M6 / A14 Junction	Major scheme. Junction Improvement	Not Known	Improvement of Junction 19 of the M1 motorway
A5/M1 Link North of Dunstable	Dual two lane Dunstable northern bypass, running east from A5 to join the M1 at a new junction 11a south of Charlton	2016	Increased capacity and reduced congestion, improved access to strategic development sites north of Dunstable
A43/A5 Tove Roundabout, Towcester	Pinch Point scheme	2015	Tackle congestion by widening A43 approach to three lanes
M1 J15 Improvements	Junction Improvements S278	Not Known	Ramp metering on NB on-slip
M1 J15a Improvements	Junction Improvements S278	Not Known	Minor roundabout widening

7.14 T

he London to Scotland East Route Based Strategy also refers to the introduction of 'Smart Motorways' between J13 and J19 of the M1 as being an approved pipeline scheme, although without identified timescales for delivery within the report.

London to Scotland West

7.15 The London to Scotland West route is one of the 5 main routes within the heart of the region and passing through the south-west of the SEMLEP are, including sections of the M40. In particular the M40 south of junction 10 (with the A43) is within the top 10% recorded on the route in terms of vehicle hours delay, which is partially due to a mix of local and strategic traffic between junctions 8 and 10.

7.16 There are also two committed infrastructure schemes in the area, summarised in **Table 7**.

Table 7 – Highways Agency SRN Schemes 3

Location	Scheme Type	Completion Year	Anticipated Benefits
A34 / M40 J9 Wendlebury Improvement Bicester	Pinch Point Scheme	2014	Improvements to the operation of the junctions to reduce congestion on the A34 northbound and the A41 southbound
M40 J10 Improvement	Pinch Point Scheme	2014	Support the link between the M40 / A34 and M1/A45/A14 routes through capacity improvements and signalisation

London to Leeds

7.17 This route includes a section of the A1 to the east of Bedford and details three of the least reliable sections of the route as being on the A1 between Central Bedfordshire and Huntingdon. Whilst lightly trafficked compared to other sections of the route, reliability is impacted by the at-grade roundabouts in this section.

7.18 Approaches to the Black Cat roundabout also experience some of the lowest speeds due to congestion / capacity issues, with the following scheme, summarised in **Table 8** proposed to address this.

Table 8 – Highways Agency SRN Schemes 4

Location	Scheme Type	Completion Year	Anticipated Benefits
A1 / A421 Roxton 'Black Cat' roundabout	Pinch Point Scheme	2015	Safety and capacity improvements and better access to development sites around Bedford

Solent to Midlands

7.19 The Solent to Midlands Route Based Strategy covers the A43 between the M1 and M40 and the northern section of the A34 between the A34 and Oxford.

7.20 This is identified as an important route for freight, with the A43 traffic including 24% freight and 20% of A34 traffic also being freight. Two sections of the A43 within the SEMLEP area are included in the ten least reliable journey time sections of the overall route, these being the A43 between the A413 and the A5 (west of Towcester in South Northamptonshire) and the A43 between the M40 J10 and the A421. The two Pinch Point Schemes identified for improvement on the part of this route in the SEMLEP area are the Tove Roundabout north of Towcester and Junction 9 of the M40 with the A34 A5/A43, which are respectively also identified in **Table 6** and **Table 7**.

NETWORK RAIL STRATEGIES

7.21 Information was provided by Network Rail summarising the main long term rail considerations relevant to the SEMLEP area, with information covering long term planning (covered within the long term Market reports) and network specific objectives (covered within the London North East and North West Route Studies).

London and South East Market Study

7.22 The London and South East Market Study provides an overview of the long term planning process related to services linking London and the South East area.

7.23 One of the main objectives for the long term rail planning process to achieve is to support economic development, in particular by providing sufficient capacity for people travelling to take part in economically productive activities, by improving business to business connectivity.

7.24 In order to provide these economic benefits the report refers to two main criteria:

- For journeys which include Greater London, any reduction in time travelling improved business to business activity leads to large benefits.
- For large regional centres, significant economic benefits arise from increased business interaction when total journey times are under 60 minutes.

7.25 The report refers to the 2012 HLOS (High Level Output Specification) for England and Wales, which sets the investment priorities for 2014-2019. Ring fenced investment detailed within the report for the London and South East areas includes further electrification of the network – electrification of a number of route sections, including the East-West Rail core route from Oxford to Bedford via Bletchley to create a direct link between the Great Western, West Coast and the Midland Main Lines.

7.26 As a result the 'conditional outputs' targeted by the study are to:

- Accommodate peak demand;
- Provide incremental improvements to journey times; and
- Provide a total journey time of less than 60 minutes

7.27 The report includes two example case studies which are relevant to the SEMLEP area and which highlight the potential future benefits associated with rail investment.

Case Study for Oxford – Milton Keynes

7.28 Currently the absence of a railway line connecting Oxford and Milton Keynes means that journey times are not attractive (75 minutes nominally by road but with poor reliability).

7.29 Both Milton Keynes and Oxford are identified as large employment centres of 120,000 (Milton Keynes) and 80,000 (Oxford) jobs respectively. As both areas have a strong base in knowledge intensive industries and institutions there is considerable potential for interaction between the two but the current distance by rail (via London) is 90 miles, making this an unattractive alternative to road travel.

7.30 The introduction of the East – West Rail link will reduce this journey distance to 34 miles. This will equate to an estimated total travel time of 70 minutes (40 minutes journey time with 2 opportunities to travel per hour). This will provide a transport option which is comparable (or preferable) to travelling by road in terms of journey time and reliability.

Case Study for Luton – London

7.31 Total travel time between London and Luton is currently 45 minutes (30-35 minutes on train, with 4-6 opportunities to travel per hour).

7.32 Luton has population of 250,000 and job market of 50,000 jobs, which would both benefit from an improved level of connection to London via rail. Based upon the need to provide an improved level of connectivity the identified conditional outputs for the Luton – London link should be:

- Accommodate peak commuting demand;
- Provide a total journey time close to 35 minutes as possible (with an on train time close to 24 minutes);

7.33 However, the report accepts achieving these levels of service would be difficult without tradeoffs with other services and / or additional infrastructure.

Regional Urban Market Study

7.34 The Regional Urban Market Study includes a review of the future service level aspirations for a number of the other routes operating within the SEMLEP area (but outside of London). The main identified 'conditional outputs' for each route are summarised below.

7.35 Northampton / Coventry to Birmingham New Street: At present there are a significant number of total journeys to and from Northampton Station, approximately 2,714,000 annual total journeys between 2011 and 2012 (based upon Office of Rail Regulation Station usage data).

7.36 At present the journey times from Northampton to Birmingham are currently above 60 minutes, which is above the recommended threshold journey time for providing additional economic benefits.

7.37 The 'conditional output' targets for this route are therefore detailed as improving journey times from Milton Keynes Central and Northampton to Coventry and Birmingham New Street (in particular to bring journey times below the 60 minute threshold) and to provide improved services from Northampton to Coventry and to Birmingham New Street in peak periods.

7.38 Bedford Line into Leicester: For stations in the SEMLEP area the report identifies total number of journeys through each station on this route as being 996,000 trips to and from Kettering, 3,304,000 trips to and from Bedford and 3,440,000 total trips to and from Luton. The report identified the potential to improve journey times between Kettering and Leicester but that there was limited scope to improve journey times on the southern sections of the route (i.e. from Luton and Bedford).

Long Distance Market Study

7.39 The Long Distance Market Study provides details of the main objectives for long distance rail over a longer plan period which runs to 2043. A brief summary of the 'conditional outputs' identified for longer distance journeys to and from a number of the rail stations in the SEMLEP area is provided below:

- For Luton the longer distance route aspiration is to maintain levels of service (other than the links to Milton Keynes and Birmingham detailed below);
- For Milton Keynes the longer distance route aspiration is to maintain service levels other than for connections to Luton, where the aim is to provide a high speed commuter link;
- For Northampton the longer distance route aspiration is to maintain service levels other than for connections to Milton Keynes, where the aim is to provide a high speed commuter link;
- The longer distance route aspiration for Birmingham to Luton is to provide an 80mph service between 1-2 times per hour;
- The longer distance route aspiration for Birmingham to Milton Keynes is to provide either a higher speed, lower regularity service (100mph 2-3 services per hour), or a lower speed, higher frequency service (60 mph, 3-4 services per hour); and
- The longer distance route aspiration for Liverpool and Manchester to Milton Keynes is to deliver an 80mph route providing 1-2 services per hour.

London North Western Route Plan

7.40 The London North Western Route Plan outlines the main areas of strategic project investment planned during CP5 (Control Period 5), with the main projects relevant to the SEMLEP area summarised below:

- Evergreen 3 – new London Marylebone to Oxford Service (2 trains per hour in each direction – franchise commitment to commence this service in December 2014).
- Leamington to Coventry capacity improvement – part of 'electric spine'.
- Electric Spine – Midland Mainline Creation of a high capacity passenger and freight electric railway corridor. 25Kv AC overhead electrification between:
    - Oxford – Banbury – Leamington Spa

- Oxford – Bicester Town – Bletchley – Bedford with double track
- Electrification of the Midland Mainline north of Bedford

- East – West Rail – Linking Oxford / Aylesbury – Bletchley – Bedford to provide a through service between Oxford / Aylesbury and Milton Keynes and between Oxford and Bedford in support of economic growth and development. At the time of preparing this report it is understood the alignment of the section of route between Bedford and Bletchley is currently under review, although a basic service pattern is under consideration for operation from 2017 onwards.
- Growth of Daventry International Rail Freight Terminal – currently running 15 trains a day, plans to increase this to circa 32 trains a day.

Rail Summary

7.41 The future role of rail in the SEMLEP area is expected to become increasingly important as the current gaps in the rail network (in particular the lack of high quality east-west links) are addressed.

7.42 The review of the strategic aims and direction of rail investment in the SEMLEP area makes it clear that the linkages between a number of the Urban areas remains a future priority, with longer term aspirations to improve the rail links between:

- Luton and Milton Keynes; and
- Milton Keynes and Northampton.

7.43 The review also identified proposals to improve travel to and from locations outside of the SEMLEP area, including improving connectivity between:

- Luton and London;
- Luton, Milton Keynes, Northampton and Birmingham; and
- Milton Keynes and Oxford.

LOCAL SCHEMES

7.44 In addition to integration with schemes at the national and regional level, the review of potential SEMLEP area transport schemes also needs to consider the relationship of schemes with other transport priorities and projects supported at the local (Local Transport Plan) level.

7.45 The Government's Pinchpoint Fund is also contributing to some of these local improvements, although there are a number of other local improvements to Pinchpoints on the transport network funded by this Government initiative including the signalisation of the Kingston Roundabout and the dualling of A421 Fen Farm to Eagle Farm. Following a successful bid for £8.81m of government funding aimed at easing congestion at 'bottleneck' areas at A421 and Kingston roundabout. The Kingston roundabout will be improved by enlarging and signalising the junction. Improved pedestrian and cyclist connections for the area, including underpasses, will also be provided. The schemes will cost around £17m in total and the remainder of the funding will come from developer contributions.

7.46 In addition, there are some local improvements where Pinchpoint funding was applied for but, whilst achieving High Value for Money, were unsuccessful. These included funding applications for delivering a section of Luton's existing town centre ring road on the north-west side of the town centre.

7.47 Following the review of transport objectives undertaken for the SEMLEP area there may be some potential to reconsider the case for a number of these schemes, which will be reviewed during the SEP plan period.

7.48 It is also expected that the lead delivery bodies for LSTF projects promoting sustainable travel and smarter choices options will, in most cases, be individual or joint Local Authorities, with wider support and potential for coordination offered by the SEMLEP.

7.49 In the case of the Smarter Routes to Employment scheme being operated by Central Bedfordshire Council, this represents an extension of an existing, successful project to cover a wider geographical area, covering areas of Luton, Dunstable and Houghton Regis. This project would be delivered locally by Central Bedfordshire and Luton Councils, supported by SEMLEP and with the potential for replication across the wider SEMLEP area.

7.50 Milton Keynes Council are also currently in the preparatory stages of project planning for the next stage of LSTF works, with the scope for the implementation of infrastructure improvements planned through the SEP to help support locally delivered sustainable travel projects and for the sharing of project experience between local authority partners within the SEMLEP area.

7.51 The SEMLEP area is also considering the potential benefits related to an area wide LSTF revenue bid, building upon the strategic infrastructure improvements planned within the current SEP by funding other supporting elements of an improved inter-urban public transport offer, including improved real-time information, interchange between sustainable modes and route service frequency.

8 Further Evidence Based Review of SEMLEP SEP Schemes

8.1 The following section of this strategy provides a summary of the evidence based detailed in **Sections 4** to **7** and relates this to the transport schemes and measures proposed within the South East Midlands SEP.

8.2 In order to do this each scheme proposed within the SEP has been reviewed based upon the following:

Ability to support the strategic transport objectives for the SEMLEP area

8.3 Using the 4 Transport Strategy objectives identified in **Section 4;** this provides an objective based review of the overall 'Strategic Fit' for each scheme, using a 5 point scale (from -2 significantly obstructs to +2 significantly supports) to assess the potential impacts of schemes against each of the 4 main transport objectives.

8.4 The scoring notes used as the basis for this comparative assessment are provided as **Appendix C**, with the summary information provided in **Figure 14** to **Figure 16** later in this chapter.

Deliverability and Value for Money Schemes

8.5 The work undertaken by Arup to review the potential deliverability of schemes considered a range of factors including planning status, funding position and the state of readiness of schemes, resulting in a percentage score being applied to each scheme (ranging from 53% - 71% for the SEP schemes). The deliverability and value for money column of the summary table is based upon the figures taken from this more detailed review of deliverability issues associated with each scheme.

Ability to accommodate future strategic demands for travel

8.6 Identification of the links between identified transport schemes and the information on expected travel demands, areas of potential congestion and future pressure summarised in the data collection and evidence base work detailed in **Section 5**.

Ability to support or integrate with sustainable transport initiatives and measures

8.7 As strategic levels schemes, many of the projects promoted through the SEP relate to movement between the main urban areas. However, there are also potential inter-relationships with more locally delivered sustainable transport schemes, this builds upon the information on the potential for sustainable transport measures detailed in **Section 6**.

Relationship with planned strategic projects

8.8 **Section 7** of this strategy provides a summary of the strategic objectives for the SEMLEP area identified by national transport bodies including the Highways Agency and Network Rail. A number of the projects promoted through the SEP have the ability to support these national level objectives and to integrate with, or add value to, projects being promoted and delivered by these national bodies.

LOCAL TRANSPORT BOARD PRIORITY SCHEMES

8.9 The South East Midlands Local Transport Board have identified 4 schemes which are proposed as a priority for initial funding.

8.10 Each of the schemes proposed for early delivery by the LTB are major infrastructure schemes which have been prioritised based upon the ability to enable an early release of major areas of development and to provide a balance of positive outcomes for the SEMLEP area.

8.11 A summary information table for the LTB priority schemes is provided on the following page as **Figure 14**.

Figure 14 - LTB Priority Schemes

	SEMLEP Transport Strategy Objectives					Total	Other factors			NOTES
Scheme	Protect and enhance the built and natural environment	Provide high quality, safe access to services and opportunity	Maintain and enhance the regions links with the wider economy	Build capacity to enable growth and economic development	Deliverable and value for money schemes		Specific Develop-ment released	Links with local schemes	Links with regional / national schemes	
A421 Dualling from Fen Farm to J13	0	1	2	2	71%	5	2,900 homes in SLA and 100ha Employment	A421 East of Milton Keynes	J13 M1	Will provide additional capacity on the section of A421 otherwise predicted as the most congested in forecast, high levels of demand predicted between Milton Keynes and Bedford as a result of planned development. Will improve public transport journey times and reliability.
Bedford Western Bypass Phase 2 Northern Section	2	0	1	2	N/A	5	1,300 homes, 1,000 jobs	Completion of Western Bypass		Completes bypass by linking the A421 to A6. Should relieve pressure on town centre routes and alternative north / south routes and open development land to the north-west.
Improved Highway Access to London Luton Airport	0	1	2	2	67%	5	1,000 jobs	Century Park employment area		Dualling of Airport approach road, airport planning to increase passenger numbers from 12 million to 18 million b 2031.
Woodside Link	1	0	2	2	67%	5	5,150 homes, 2,400 jobs	A5-M1 Link	Junction 11a M1	Will unlock private sector funding for the A5-M1 Link, supported by HA. Existing and predicted congestion on urban strategic routes to the north of Luton.

A421 Dualling (Fen Farm to J13 M1)

8.12 In the case of the A421 Fen Farm to J13 dualling scheme, the benefits were largely related to a combination of the direct support for development at a local level (supporting the eastern expansion area in Milton Keynes and helping to deliver 2,900 homes and 100Ha of employment land), the support for wider development (as a key link for commuter trips between Bedford and Milton Keynes as detailed in the data review in **Section 5**) and an improved connection to the strategic road network at Junction 13 of the M1. This was reflected in the assessment of the project, with the scheme being considered to particularly support the following transport strategy objectives:

- Maintain and enhance the regions links to the wider economy (by providing an improved link to the M1); and
- Build capacity to enable growth and development (by releasing development sites and linking major growth areas).

8.13 This project also received the highest rating of all the schemes reviewed by Arup with regards to potential value for money and deliverability and integrates well with other major schemes, including the completion of improvements to the section of the A421 between M1 Junction 13 and Bedford.

8.14 The dualling of the final section of the A421 from Junction 13 into Milton Keynes will also provide wider benefits in terms of improved public transport journey times and journey time reliability, removing the capacity constraints on the final, important element of this inter-urban route. This would provide an element of the infrastructure necessary to support improvements to inter-urban bus services and other sustainable transport measures proposed through either the SEP or local transport authority LTP or LSTF programs, detailed in **Section 6**.

Improved Highway Access to London Luton Airport

8.15 The 'Improved Access to London Luton Airport' scheme also provides a mix of expected benefits including directly releasing development (related to employment growth at and around the airport site which could deliver 1,000 jobs), whilst also improving the strategic connectivity of the South East Midlands LEP area, (supporting the airports aspiration to increase passenger numbers from 12 million to 18 million per annum by 2031). This scheme could also help to offset the strategic highway issues identified in this area within the

Highways Agency Route Based Strategy work, which highlights the access spur from the M1 to the airport as a current area of significant network congestion and delay (summary information provided in **Section 7** of this strategy document).

8.16 The DfT access to airports information contained in **Section 5** also makes it clear that, outside of access to London Luton, access to major airports in the SEMLEP area is largely reliant upon rail as the main means of travelling to / from airports (in particular to Birmingham and London Heathrow). As such encouraging improved access to London Luton airport could be expected to further encourage the use of the airport for trips originating within the SEMLEP area for both business and leisure travel. This scheme is considered to particularly support the following transport strategy objectives:

- Maintain and enhance the regions links to the wider economy; (by improving the links between a Regionally and Nationally Important airport and the strategic road network); and
- Build capacity to enable growth and development (by releasing development at the Airport and associated development sites, whilst also improving an area of local congestion on the strategic network).

Woodside Link

8.17 The Woodside Link enables the release of a major development site to the north of Dunstable / Luton by providing a link from the Hougton Regis Sustainable Urban Extension (SUE) onto the planned A5 – M1 link road. This will deliver 5,150 homes and 2,400 jobs, whilst protecting the existing (and already congested) highway network, from the direct impacts of growth. The need for the early delivery of this scheme was highlighted in the evidence base review contained in **Section 5** which identified significant additional traffic demands arising from the Houghton Regis development, exacerbating the existing congestion on the A505 between Luton and Dunstable and congestion on the main strategic routes through Luton. The scheme supports a range of the identified transport strategy objectives including:

- Maintain and enhance the regions links to the wider economy (by providing a direct high quality link onto two strategic highway routes, including the A5-M1 Link);
- Build capacity to enable growth and development (by directly releasing a major urban extension site, whilst minimising the direct traffic impacts of the development); and

- Protect and enhance the built and natural environment (as a result of removing predicted development traffic from the existing urban areas within Dunstable / Luton).

Bedford Western Bypass Phase 2

8.18 The Bedford Western Bypass (Phase 2 Northern Section) completes the bypass route to the west of Bedford by linking the A421 to the A6. This will provide a number of benefits including the opening up of land to the north-west of Bedford for development, releasing 1,300 homes and 1,000 jobs.

8.19 Whilst the review work undertaken in **Section 5** did not address local issues within major Urban Areas, the assessment work does predict a significant growth in demand for travel on both the A421 (to the south-west of Bedford) and the A6 (to the north-west). As a result the delivery of the final section of the western bypass could be expected to provide the link between these two areas of significantly increased demand for travel and cater for longer distance commuter (and other) trips travelling between the two. This will result in improved journey times and journey time reliability for longer distance north-south trips, whilst protecting the town centre network. The scheme supports a range of the identified transport strategy objectives including:

- Protect and enhance the built and natural environment (as a result of removing predicted development traffic related to development to the north-west and also unnecessary longer distance through traffic from the centre of Bedford).
- Maintain and enhance the regions links to the wider economy (by providing a direct high quality link between two locally important 'A' roads, and by improving the routes between M1 J13 and the north-east of the SEMLEP area); and
- Build capacity to enable growth and development (by directly releasing development land to the north-west of Bedford, whilst minimising the direct traffic impacts of the development).

OTHER SEP TRANSPORT SCHEMES

8.20 In addition to the four priority schemes summarised above, the SEP includes a range of proposed projects which provide a balanced approach to the expected future transport needs of the SEMLEP area. A summary of the full list of proposed transport projects (including the 4 priority schemes) is provided in **Figure 15** on the following page.

Figure 15 - SEP Transport Schemes

	SEMLEP Transport Strategy Objectives					Total	Other factors			NOTES	Adjacent LEP Priority
Scheme	Protect and enhance the built and natural environment	Provide high quality, safe access to services and opportunity	Maintain and enhance the regions links with the wider economy	Build capacity to enable growth and economic development	Deliverable and value for money schemes		Specific Develop-ment released	Links with local schemes	Links with regional / national schemes		
A421 Corridor Improvements	0	1	1	2	58%	4	Employment sites on A421 delivering up to 12,000 jobs	A421 Dualling From Fen Farm to J13	J13 M1 and HA planned A1/A421 pinchpint scheme	A421 corridor is predicted to accommodate high traffic levels as a result of planned development. Junction / Access constraints could reduce the effeciency of the route for inter-urban trips.	
A421 Dualling from Fen Farm to J13	0	1	2	2	71%	5	2,900 homes in SLA and 100ha Employment	A421 East of Milton Keynes	J13 M1	Will provide additional capacity on the section of A421 otherwise predicted as the most congested in forecast, high levels of demand predicted between Milton Keynes and Bedford as a result of planned development. Will improve public transport journey times and reliability.	
Abthorpe Roundabout	1	0	1	2	69%	4	Towcester South SUE (1,100 homes in first phase), 600 direct jobs and 3,200 indirect jobs including Silverstone Business Park	Towcester Southern Relief Road	HA Tove Junction Pinchpoint Scheme	Will provide for significant predicted demand for new development traffic on A43 west of Towcester. A43 between A413 and A5 is one of ten least reliable sections of route in HA Route Based Strategy.	
Aylesbury Eastern Link Road and Stocklake Link	2	0	1	2	59%	5	3,500 indirect jobs, 2450 homes	A418 East of Aylesbury to A4146 Linslade Bypass		2026 forecast predicts congestion on main routes through Aylesbury, this scheme Links A41 east of Aylesbury with A418 east of Bierton removing traffic from the centre of the town - considered neccesary for releasing development.	Bucks / Thames Valley LEP
Bedford Western Bypass Phase 2 Northern Section	2	0	1	2	N/A	5	1,300 homes, 1,000 jobs	Completion of Western Bypass		Completes bypass by linking the A421 to A6. Should relieve pressure on town centre routes and alternative north / south routes and open development land to the north-west.	
Bletchley Station Improvements	1	1	1	1	53%	4	300 jobs		East - West Rail	Part of town centre masterplan and regeneration	
Daventry Development Link Road	1	0	2	2	64%	5	Daventry development sites (6,065 homes including 4,000 homes at Daventry North East SUE)			Will improve links to the M1 and provide a bypass to the villages of Flore / Weedon. Significant predicted demand for trips between Daventry and M1 J16, A45 approaching link capacity in base and predicted over capacity in forecast (with development).	NEP
Improved Highway Access to London Luton Airport	0	1	2	2	67%	5	1,000 jobs	Century Park employment area		Dualling of Airport approach road, airport planning to increase passenger numbers from 12 million to 18 million b 2031.	
Joining Up St James Mill Road	1	1	0	1	61%	3	75 jobs			Included in Northampton Enterprise SEP	NEP
Kettering Energy and SUE	1	0	2	2	62%	5	5,500 homes, 2023 jobs		Widening of A14, J7-J9	Overlap with NEP	NEP
London Luton Airport Surface Access	1	2	1	1	56%	5	4,800 jobs	Improved Highway Access to London Luton Airport / Century Park employment area			
Smarter Routes into employment (Central Bedfordshire)	1	2	0	1	65%	4	25 jobs (directly)				
Woodside Link	1	0	2	2	67%	5	5,150 homes, 2,400 jobs	A5-M1 Link	Junction 11a M1	Will unlock private sector funding for the A5-M1 Link, supported by HA. Existing and predicted congestion on urban strategic routes to the north of Luton.	

8.21 As with the priority schemes identified by the South East Midlands Local Transport Board, the other projects proposed for delivery through the SEP have a strong focus upon delivering growth, whether by unlocking specific development areas or by mitigating the wider impacts of growth by improving intra-urban and inter-urban links in the SEMLEP area.

8.22 A brief summary of each of the projects proposed is provided below:

A421 Corridor Improvements

8.23 As identified in **Section 5**, the A421 is expected to see a considerable increase in demand for inter-urban travel, covering both longer distance trips (accessing the A421 from J13 of the M1) and local commuter journeys, (between Milton Keynes and Bedford). The A421 corridor is also expected to provide access to a number of major employment sites providing for up to 6,000 new jobs. The proposed A421 corridor improvements will help ensure that the 4 major development sites expected to deliver these jobs can be developed whilst protecting the operation of this important transport corridor.

Abthorpe Roundabout

8.24 The Abthorpe Roundabout is one of the two roundabout junctions to the west of Towcester expected to require improvement works as part of a package of works to deliver major growth sites on the A43 corridor. In particular the A43 to the west of Towcester is expected to see increases in traffic flows following the development of the Towcester South SUE, which will deliver 1,100 homes in the study period (and a further 2,650 homes in the longer term). The improvements will also support the creation of 3,800 jobs, including helping to release employment land at both the Towcester South SUE and the Silverstone Business Park.

8.25 The project corresponds to a number of other major planned infrastructure projects, including supporting the delivery of an A5 relief road to the south-east of Towcester and building upon the improvements being promoted by the Highways Agency at the Tove roundabout (as detailed in the Route Based Strategy documents summarised in **Section 7**). As a result the scheme is expected to both accommodate the additional demands for travel on the A43, as identified in the evidence review in **Section 5**, and to help relieve traffic congestion through the centre of Towcester, protecting the historic centre of the town and supporting town centre regeneration.

Aylesbury Eastern Link Road

8.26 The Aylesbury Eastern Link Road is expected to relieve congestion in and around the centre of Aylesbury and help unlock some of the capacity constraints related to the current highway network (which was identified as an area of existing constraint in the previous study work undertaken and summarised in **Section 2**).

8.27 This was further reinforced by the evidence based review undertaken in **Section 5**, in which increased levels of traffic demand on the main strategic highway routes through Aylesbury were predicted to result in these routes experiencing increased levels of link stress.

8.28 It is understood that the Buckinghamshire Local Transport Board will be promoting and delivering this project and in light of the above, SEMLEP would support any application that the Buckinghamshire / Thames Valley LEP make to deliver this scheme.

Bletchley Station Improvements

8.29 The proposed Bletchley Station Improvements project will deliver 300 jobs as part of a wider strategy to regenerate the Bletchley area, building upon the economic possibilities associated with improved rail connection to the town (predominantly as a result of East-West Rail). Whilst a transport scheme, the main aim of the project is to provide an improved transport gateway to Bletchley, encouraging investment and growth in the area.

Daventry Development Link Road

8.30 The Daventry development link road will serve a number of important functions as part of the strategic highway network to the west of Northamptonshire. As a result of planned development and growth across the Northamptonshire area, including major sites planned in both Daventry and Northampton, the route linking the two areas (via the A45 and A4500) will undergo increasing demands for travel.

8.31 The section of route proposed for improvement within this project is the lowest standard section of highway on this route, passing through a number of smaller urban areas, including Flore and Weedon. The new alignment delivered through the scheme will provide a higher standard and capacity route, which will improve journey times and journey time reliability, whilst removing unnecessary through traffic from these settlements.

8.32 This was supported by the findings of the evidence base review in **Section 5**, in which significant increased demands on the route are predicted, with associated increases in predicted link stress. The scheme will also improve access to and from the strategic road network, by providing better access to Junction 16 of the M1 for development areas to the west of Northamptonshire and has the potential to enable improved inter-urban bus route journey time between Daventry and Northampton.

Joining up St. James Mill Road

8.33 The joining up St. James Mill Road scheme will link the existing St. James Mill Road to St. James Mill Road East, creating a new route within Northampton offering an alternative east-west route to the currently congested A4500.

8.34 The improvements will help to unlock 75 jobs directly, whilst also helping to improve access to areas of the Northampton Enterprise Zone, with the potential to deliver a more significant number of new jobs.

8.35 The provision of the alternate east-west route will also provide the potential for alternative routing of some public transport routes, which could improve service times and reliability.

Kettering Energy and SUE

8.36 The Kettering Energy and SUE project will help deliver the new Junction (10a) onto the A14 required to facilitate the proposed Kettering East SUE, which will deliver a total of 5,500 homes and 2,023 jobs. The project will also provide changes to Junction 10 of the A14 in order to enable the safe delivery of Junction 10a.

8.37 This project fits with the current improvement works being undertaken between Junctions 7 and 9 of the A14 by the Highways Agency and with the further improvement works being undertaken at the junction 19 of the M1, which will provide additional capacity required to help mitigate the immediate impacts of the Kettering East site and also support wider development and growth effecting the A14 corridor.

8.38 The proposed access works will also protect the relatively constrained local road network from the immediate traffic effects of the SUE and enable sustainable links to be made east-west between the site and the remainder of the town.

Smarter Routes into employment

8.39 The smarter routes into employment project will extend the successful Central Bedfordshire Smarter Routes to employment project to cover a wider geographical area, covering areas of Luton, Dunstable and Houghton Regis.

8.40 The project will promote the use of sustainable modes to access employment opportunity and will help to focus efforts upon the large number of local and shorter distance employment trips that could be expected in the area, as summarised in **Section 6** of this Strategy.

8.41 As a result this project is expected to particularly support the Transport Strategy objective to provide high quality, safe access to services and opportunity. The project will also support the wider development planned for the Luton, Dunstable and Houghton Regis area by removing existing and prospective vehicle trips from the local transport network. The project also has the potential to deliver a culture of sustainable trip making in advance of the delivery of the major planned residential and employment sites planned for the area.

9 Potential longer term Projects

INTRODUCTION

9.1 Whilst the transport schemes outlined in **Section 8** of this Strategy are the basis of the current SEP, there are a number of other major infrastructure schemes proposed in the SEMLEP area which may be considered as future transport priorities for the area. In a number of cases these projects relate to an area of identified transport need, but due to the potential scale and current state of preparation of these projects, they are considered appropriate to promote in the longer term. Schemes not included within the current SEP, but with potential to be considered for future phases of infrastructure investment are summarised in **Figure 16**.

POTENTIAL FUTURE SCHEMES

9.2 Based upon the ability of transport schemes to support the strategic objectives of the SEMLEP transport strategy, large capital or revenue schemes which provide significant improvements in public transport offer (either rail or bus based) are expected to offer considerable potential benefits in the longer term, example projects are summarised below.

9.3 The provision of a new rail station to serve the 'Wixams' development area south of Bedford, which will provide public transport access for approximately 7,000 new homes. The scheme scored well due to the combination of support for local development, improved access to the strategic transport network and improved levels of accessibility related to the new station and interchange.

9.4 Other high scoring schemes include the larger scale public transport schemes, i.e. the provision of South East Midlands Inter Regional Public Transport Routes and the Northamptonshire Arc Transit Network. Both schemes scored well due to the potential benefits to the local environment in terms of reduced levels of car traffic, increased accessibility and the ability to indirectly support wider development by enabling sustainable trip making between major urban centres (with the data review in **Section 5** identifying a considerable level of demand for daily trips between major urban centres in the South East Midlands LEP area).

9.5 The provision of a new station to the North of Luton was also expected to support the sustainable transport aspirations of the SEMLEP area, in particular by supporting sustainable

travel from two major SUE sites and potentially providing for a northern Park and Ride rail based site.

Figure 16 – Potential future SEMLEP Area Schemes

	SEMLEP Transport Strategy Objectives					Total	Other factors			Adjacent LEP Priority	NOTES
Scheme	Protect and enhance the built and natural environment	Provide high quality, safe access to services and opportunity	Maintain and enhance the regions links with the wider economy	Build capacity to enable growth and economic development	Deliverable and value for money schemes		Specific Develop-ment released	Links with local schemes	Links with regional / national schemes		
Wixams Rail Station	1	2	2	2		7	Supports sustainable access to and from the Wixams development (circa 7,000 homes) and surrounding areas.				
East West Rail (central section)	0	2	2	2		6					
East West Rail (western section)	0	2	2	2		6				Oxfordshire LEP	
Inter Regional bus services	2	2	1	1		6					Forecast predicts significant demand for commuting trips between the main SEMLEP Urban Areas, in particular Milton Keynes to Bedford, Luton and Northampton. Luton to Bedford, Northampton to Wellingborough and Towcester and Bicester to Oxford.
North Luton Station	0	2	2	2		6	Supports Houghton Regis and north of Luton development (8,500 homes)	Luton northern bypass	Junction 11a of M1		
Northamptonshire Arc Transit Network	2	2	1	1		6				NEP	Forecast predicts considerable inter-urban movements between Northampton and Wellingborough, Kettering and Corby to the North and to Towcester and Brackley to the South
Central Milton Keynes Passenger Transport Infrastructure	1	2	1	1		5		Inter Regional bus services	East-West Rail		Significant predicted demand for travel between urban centres, with high demand between Milton Keynes and Bedford, Luton and Northampton.
M1 - Sundon Park Road (over railway)	1	0	2	2		5	13ha employment and enables north of Luton SUE and Sundon Rail Freight Interchange	Sundon Park to A6 Link			Existing and predicted congestion on urban strategic routes to the north of Luton.
Northampton Growth Management Scheme	0	1	2	2		5	Northampton SUE sites (4,850 homes at sites north, east and south)	Northampton Inner Ring Road Improvements	HA M1 J15 and 15a Improvements	NEP	Scheme agreed with Highways Agency to manage cumulative impacts of growth sites. Significant predicted increase in demand for travel on A45 and resulting link stress.
Northampton North West Bypass	2	0	1	2		5	Northampton SUE sites (5,250 homes at Kingsheath, West and North sites)	Sandy Lane Relief Road		NEP	
Towcester Southern Relief Road	2	0	1	2		5	Towcester South SUE	Abthorpe Junction Improvement	HA Tove Junction Pinchpoint Scheme		Will remove traffic from Towcester Town Centre, improving local air quality on old A5 alignment. Identified in HA Route Based Strategy as currently poor journey time reliability, A5 through Towcester predicted to be over 100% link stress by 2026.
Corby Northern Orbital	1	0	1	2		4	22,000 jobs including Employment land at Rockingham and 14,800 homes, including development at Priors Hall			NEP	
A418 East of Aylesbury to A4146 Linslade Bypass	1	0	2	1		4		Aylesbury Eastern Link Road & Stocklake Link			Future priority scheme for Buckinghamshire, providing improved links from Aylesbury to the north-east
A43 Corridor Improvements (Northampton North)	1	0	1	2		4	North Northampton SUE (2,750 Homes)		A14 Widening Junctions 7-9	NEP	A43 corridor between Kettering and Northampton predicted to be stressed by 2026, particularly to the immediate north of Northampton.
Batts Ford Bridge	1	2	0	1		4					Additional crossing of the River Ouse, providing new road, pedestrian and cycle crossings, reducing town centre congestion
Bicester London Road Rail Crossing	0	1	2	1		4			East - West Rail / Evergreen 3	Oxfordshire LEP	Will overcome potential severance issues on London Road resulting from increased rail services through Bicester and support the delivery of East-West Rail and Evergreen 3).
Biggleswade Transport Interchange	1	1	1	1		4	Indirectly supports 1,272 homes (Biggleswade)				Part of town centre masterplan and regeneration
Brinklow Roundabout Improvements	0	0	2	2		4		A421 Dualling from Fen Farm to J13			Supports the wider A421 improvements linking Central Milton Keynes with junction 13 M1.
Flitwick Transport Interchange	1	2	1	0		4	85 extra Care Homes and 0.2ha employmnet				
Infrastructure for Century Park Emp Area	0	1	1	2		4	1,000 homes and 2,600 jobs	Provides first phase of East Luton improvements (Airport Way and A505)			
Luton Central Station redevelopment	2	1	1	0		4					
Monkston Roundabout Improvements	0	0	2	2		4		A421 Dualling from Fen Farm to J13			Supports the wider A421 improvements linking Central Milton Keynes with junction 13 M1.
Broughton Brook Bridge	0	1	0	2		3	Directly releases employment land and indirectly supports homes in Eastern Expansion Area (4,000 homes)				Provides a route for public transport access to / from the Eastern Expansion Area.
Corby Walk linking station and town centre	1	1	1	0		3					Will provide an improved pedestrian approach to Corby Rail Station
East of Leighton Link Road	1	0	0	2		3	2,934 homes				Will remove traffic from town centre and release East of Leighton Linslade Development site
Leighton Buzzard Transport Interchange	1	1	1	0		3					
North - East Central Bedfordshire Strategic Cycle Network	1	2	0	0		3					
Northampton Inner Ring Road Improvements	0	0	1	2		3		Northampton Growth Management Scheme			
Ransome Road - Nunn Mills Link	0	0	1	2		3	Northampton Waterside Enterprise Zone				
Silverstone A43 Access	0	0	1	2		3	Silverstone Employment Park (191ha)	Abthorpe Junction Improvement	HA Tove Junction Pinchpoint Scheme		
Weekley and Warkton Avenue (WeWaA)	1	0	0	2		3	3,750 homes (Kettering East SUE), 54ha employment	A14 Junctions 10 and 10A	A14 Widening Junctions 7-9		
A6/A421 Junction Signalisation	0	0	1	2		3	1,000 homes and 31ha employment				
Sundon Park Road - A6	0	0	1	2		3	North of Luton SUE (2,900 homes)	M1 - Sundon Park Road (over railway)	Junction 11a M1		
Colworth Science Park, Direct Access to A6	0	0	1	1		2	2ha research and development				
Kettering Town Centre junction improvements	0	1	0	1		2					

ADJACENT LEP AREAS

9.6 Due to the geographic scope of the SEMLEP area, a number of the local authority areas within the SEMLEP are also covered by other LEPs and Transport Bodies. Where appropriate those projects which are also a priority of adjacent LEP areas are detailed within the summary tables in **Figure 15** and **Figure 16**.

9.7 In the case of the Northamptonshire this includes the promotion of a number of major highway infrastructure schemes to support the delivery of growth sites across the County, including the Daventry Development Link Road (also supported within the SEMLEP SEP), the Sandy Lane Relief Road, A43 Northampton to Kettering Improvements and the Joining up St. James project.

9.8 In the case of the Bucks / Thames Valley LEP it is understood that in addition to the key delivery of the Aylesbury Eastern Link Road and the associated proposals for the Stocklake Link, that there are also longer term aspirations to improve the A418, running between Aylesbury and Leighton Buzzard. Improving this section of 'A' road being expected to provide an important element of an enhanced south-west to north-east route linking the M40 to the A5 and M1.

9.9 In the case of Cherwell District, in addition to the proposed scheme to improve the London Road rail crossing to help accommodate major rail improvements associated with East-West Rail and Evergreen 3 and supported by the Oxfordshire LEP, there are a number of further transport schemes being promoted within the Council's Infrastructure Delivery Plan. Particular schemes associated with delivery of development and economic development include wider support for East-West Rail, which is particularly important in the case of Bicester (also planned to accommodate significant employment and housing growth), improvements to the A41 corridor to the south of Bicester and promotion of improved north-south routes within Banbury. There are also a range of sustainable travel projects planned to connect the North-West Bicester development with the existing urban area, helping to minimise the traffic impacts of this major SUE.

9.10 The SEMLEP will be working with adjacent LEPS to ensure that the shared priorities held with regards to the delivery of these important projects and the release of key development sites continue to be reflected in future plans throughout the delivery of the Strategic Economic Plan.

DEVELOPING THE STRATEGY

9.11 To build upon the initial stages of work undertaken, further stages of strategic transport planning for the SEMLEP area are proposed to be delivered throughout the lifetime of the SEP. These further stages of work are proposed to:

- Further build upon the understanding of the interaction between transport and economic vitality within the SEMLEP area, including working with the Transport Systems Catapult in Milton Keynes;
- Provide a robust monitoring and measurement base against which the performance of schemes supported through the SEP can be assessed, including developing a more detailed area wide review of peak hour network operation and interaction;
- Whilst the current transport strategy objectives include an objective based upon the levels of improved access to the strategic networks important for the movement of freight, there is a need to provide additional strategic guidance covering key areas such as the movement, management and importance of freight within the SEMLEP area.

10 Monitoring Success

10.1 The policy review undertaken to identify the main objectives for the Transport Strategy (summarised in **Section 4** of this Strategy), also identified a number of potential monitoring indicators which could be used to review the longer term effects of projects delivered through the SEP.

10.2 A set of potential indicators to help inform the ongoing monitoring of transport schemes delivered through the SEP are summarised in **Table 9** (below).

Table 9 - Potential Performance Indicators

	Objective			
	Protect and enhance the built and natural environment	Provide high quality, safe access to services and opportunity	Maintain and enhance the regions links with the wider economy	Build capacity to enable growth and economic development
Performance Indicator	Number of AQMAs	Levels of accessibility to major employment sites	Improved capacity at junctions onto Strategic north/south and east/west	Numbers of housing units (directly and indirectly)
	Levels of Town Centre Traffic (through traffic)	Levels of accessibility to education	Levels of accessibility to rail stations and airports	GFA employment land released (directly and indirectly)
		Levels of satisfaction with local public transport	Passenger numbers at local Rail Stations	Changes in levels of net commuting
		Mode share of journey to work trips	Perceived ease of movement of freight	Journey time reliability
		Reported major road KSIs		

Appendix A – Development Pipeline

New Allocations (2010/11 - 2031)

ZoneNo	Development Area	District	Source	INDIVIDUAL SITES (DWELLINGS)	INDIVIDUAL SITES (DWELLINGS) by 2026
101	Rest of Aylesbury	Aylesbury Vale	Vale of Ayelsbury Plan Strategy - Submission Document (Aug 2013)	6778	4994
102	London Road, Buckingham	Aylesbury Vale		700	516
103	Aylesbury East Broughton Bierton	Aylesbury Vale		2450	1805
104	Weedon Hill	Aylesbury Vale		1037	764
105	Berryfields	Aylesbury Vale		3235	2384
	Total	**Ayelsbury Vale**		**13500**	**9947**
106	Wixams Bed	Bedford	Bedford Core Strategy and Local Issues Plan (2008)	1931	1931
107	Wixams Extension	Bedford		1050	1050
108	West of Kempston	Bedford		2356	2356
109	Land at Shortstown	Bedford		1336	1336
110	Bromham Rd Nt	Bedford		1300	1300
111	Wooton Fields	Bedford		1146	1146
112	Other Bedford	Bedford		3,399	4,066
	Total	**Bedford**		**12,518**	**13,185**
113	Wixams CenBed (and southern extensic	Central Bedfordshire	Development Strategy for Central Bedfordshire (Jan 2013)	3750	2708
114	Biggleswade	Central Bedfordshire		1272	919
115	Leighton Linslade (and east Leighton Lir	Central Bedfordshire		4062	2934
116	North Luton	Central Bedfordshire / Luton		2900	2094
117	Arlesey	Central Bedfordshire		1090	787
118	North Houghon Regis	Central Bedfordshire / Luton		5600	4044
119	Other Central Beds	Central Bedfordshire		10029	7243
	Total	**Central Bedfordshire**		**28703**	**20730**
120	Bicester	Cherwell	Cherwell Proposed Subission Local Plan (Aug 2012)	6579	4848
121	Banbury	Cherwell		4142	3052
122	Other Cherwell	Cherwell		3487	2569
	Total	**Cherwell**		**14208**	**10469**
123	Priors Hall	Corby	Email from NNJPU dated 04/02/14	4938	4938
124	West Corby	Corby		1800	1800
125	Weldon Park	Corby		1000	1000
126	Other Corby	Corby		2628	2628
	Total	**Corby**	**Emerging new figure provided b**	**13955**	**10466**
127	Daventry North-East SUE	Daventry	Email from WNJPU dated 04/02/14	1750	1750
128	Monksmoor	Daventry		1000	1000
129	Other Daventry	Daventry		3315	3315
	Total	**Daventry**		**6065**	**6065**
130	Kettering SUE	Kettering	Emerging new figure provided by JPU	3300	3300
131	Burton Latimer	Kettering		920	920
132	Desborough	Kettering		1168	1168
133	Other Kettering	Kettering		2652	2652
	Total	**Kettering**		**8040**	**8040**
	Total	**Luton**	**Draft Luton Local Plan (Dec 2013**	**6008**	**4339**
134	V4 Watling St (Western Expansion Area	Milton Keynes	Milton Keynes Adopted Core Strategy (July 2013)	6600	6600
135	Newton Leys	Milton Keynes		1650	1650
136	Kingston M1 (Eastern Expansion)	Milton Keynes		4000	4000
137	Tattenhoe Pk	Milton Keynes		1300	1300
138	Other Milton Keynes	Milton Keynes		14,491	14,491
	Total	**Milton Keynes**		**28,041**	**28,041**
139	Northampton North SUE	Northampton	Email from WNJPU dated 04/02/14	2750	2750
140	Northampton West SUE	Northampton		1800	1800
141	Northampton South SUE	Northampton		1000	1000
142	Northampton South of Brackmills SUE	Northampton		1100	1100
143	Northampton Kingsheath SUE	Northampton		2450	2450
144	Northampton North of Whitehills SUE	Northampton		1000	1000
145	Northampton Upton Park SUE	Northampton		950	950
146	Northampton Upton Lodge	Northampton		2621	2621
147	Other Northampton	Northampton		10623	10623
	Total	**Northampton**		**24294**	**24294**
148	Towcester	South Northamptonshire	Email from WNJPU dated 04/02/14	1710	1710
149	Brackley	South Northamptonshire		1125	1125
150	Other South Northamptonshire	South Northamptonshire		3346	3346
	Total	**South Northamptonshire**		**6181**	**6181**
151	Rushden	East Northamptonshire	Emerging new figure provided by JPU	1392	1392
152	Raunds	East Northamptonshire		1248	1248
153	Irthlingborough	East Northamptonshire		1138	1138
154	Other East Northamptonshire	East Northamptonshire		2151	2151
	Total	**East Northamptonshire**		**5929**	**5929**
178	**Wellingborough**	**Outside SEMLEP**	**Emerging new figure provided b**	**5658**	**5658**

	New Allocations (2010/11 - 2031)			Ha								GFA							GFA / Job Equivalent							GFA by 2026							
ZoneNo	ZoneName	District Name	Source	Jobs	B1	B2	B8	Hi-Tech	Mixed B use	Non B Use	Totals	B1	B2	B8	Hi-Tech	Mixed B use	Non B Use	Totals	B1	B2	B8	Hi-Tech	Mixed B use	Non B Use	Totals	B1	B2	B8	Hi-Tech	Mixed B us	Non B Use	Totals
101	Aylesbury	Aylesbury Vale																0	0	0	0	0	0		0	0	0	0	0	0	0	0
155	Buckingham	Aylesbury Vale																0	0	0	0	0	0		0	0	0	0	0	0	0	0
156	Northern Vale	Aylesbury Vale																0	0	0	0	0	0		0	0	0	0	0	0	0	0
157	Southern Vale	Aylesbury Vale	Vale of Ayelsbury Plan															0	0	0	0	0	0		0	0	0	0	0	0	0	0
158	Wescott employment Park	Aylesbury Vale	Strategy - Submission						14							56,000		56,000	0	0	0	0	1,612		1,612	0	0	0	0	41,263	0	41,263
101	Other Aylesbury	Ayelesbury Vale	Document (Aug 2013)													46,000		46,000	0	0	0	0	1,324		1,324	0	0	0	0	33,895	0	33,895
	Total	**Aylesbury Vale**		6,000								0	0	0	0	102,000	0	102,000	0	0	0	0	2,937	0	2,937	0	0	0	0	75,158	0	75,158
		B Class Jobs		3,000																												
159	Wooton	Bedford							9							36,000		36,000	0	0	0	0	1,037		1,037	0	0	0	0	36000	0	36000
110	Bromham Rd Nt	Bedford			4							16,000						16,000	1,333	0	0	0	0		1,333	16000	0	0	0	0	0	16000
160	B530 and Estow Brickworks	Bedford							12.8							51,200		51,200	0	0	0	0	1,474		1,474	0	0	0	0	51200	0	51200
179	Police HQ Kempston	Bedford										10,995						10,995	916	0	0	0	0		916	10995	0	0	0	0	0	10995
180	South of Cambridge Road	Bedford														30,200		30,200	0	0	0	0	870		870	0	0	0	0	30200	0	30200
181	Thurleigh Airfield	Bedford										71,200						71,200	5,933	0	0	0	0		5,933	71200	0	0	0	0	0	71200
182	Twinwoods - Milton Earnest	Bedford	Bedford Core Strategy													28,265		28,265	0	0	0	0	814		814	0	0	0	0	28265	0	28265
106	Wixams	Bedford	and Local Issues Plan									12,000		32,000				44,000	1,000	0	400	0	0		1,400	12000	0	32000	0	0	0	44000
112	Other Bedford	Bedford	(2008)													90,617		90,617	0	0	0	0	2,609		2,609	0	0	0	0	90617	0	90617
	Total	**Bedford**		13,500								110,195	0	32,000	0	236,282	0	378,477	9,183	0	400	0	6,803	0	16,386	110195	0	32000	0	236282	0	378477
		B Class Jobs		6,615																												
118	North Houghton Regis	Central Bedfordshire							30		30	0	0	0	0	120,000	0	120,000	0	0	0	0	3,455		3,455	0	0	0	0	86,667	0	86,667
116	North Luton	Central Bedfordshire							13		13	0	0	0	0	52,000	0	52,000	0	0	0	0	1,497		1,497	0	0	0	0	37,556	0	37,556
115	East Leighton Linslade	Central Bedfordshire		2,400					16		16	0	0	0	0	64,000	0	64,000	0	0	0	0	1,843		1,843	0	0	0	0	46,222	0	46,222
116	Sundon	Central Bedfordshire / Luton	Development Strategy				40				40	0	0	160,000	0	0	0	160,000	0	0	2,000	0	0		2,000	0	0	115,556	0	0	0	115,556
161	North of Flitwick	Central Bedfordshire	for Central						18		18	0	0	0	0	72,000	0	72,000	0	0	0	0	2,073		2,073	0	0	0	0	52,000	0	52,000
114	Biggleswade	Central Bedfordshire	Bedfordshire (Jan						22		22					88,000			0	0	0	0	2,534			0	0	0	0	63,556	0	0
119	Other Central Bedfordshire	Central Bedfordshire	2013)	24,600														0	0	0	0	0	0		0	0	0	0	0	0	0	0
	Total	**Central Bedfordshire**		27,000							139	0	0	160,000	0	396,000	0	468,000	0	0	2,000	0	11,402	0	13,402	0	0	115,556	0	286,000	0	338,000
		B Class Jobs		12,000																												
162	North West Bicester	Cherwell							25.5							30,600		30,600	0	0	0	0	881		881	0	0	0	0	22,547	0	22,547
163	Graven Hill	Cherwell							26							104,000		104,000	0	0	0	0	2,994		2,994	0	0	0	0	76,632	0	76,632
164	Bicester Business Park	Cherwell			17.5							70,000						70,000	5,833	0	0	0	0		5,833	51,579	0	0	0	0	0	51,579
	Total for Bicester	Cherwell		13,813															0	0	0	0	0		0	0	0	0	0	0	0	0
121	Banbury	Cherwell	Cherwell Proposed	527					37.3							65,000		65,000	0	0	0	0	1,871		1,871	0	0	0	0	47,895	0	47,895
165	Upper Heyford	Cherwell	Subission Local Plan															0	0	0	0	0	0		0	0	0	0	0	0	0	0
122	Other Cherwell	Cherwell	(Aug 2012)	162												100,000		100,000	0	0	0	0	2,879		2,879	0	0	0	0	73,684	0	73,684
	Total	**Cherwell**		14,502								70,000	0	0	0	299,600	0	369,600	5,833	0	0	0	8,626	0	14,459	51,579	0	0	0	220,758	0	272,337
		B Class Jobs																														
	Total	**Corby**	**Emerging new figure provided by JPU**	**8,898**								32,741	76,173	324,293					2,728	2,116	4,054	0	0		8,898	24,556	57,130	243,220	0	0	0	0
		B Class Jobs																														
166	DIRFT Phase II	Daventry	West	2,536								8,670		180,741				189,411	723	0	2,259	0	0		2,982	7,140	0	148,846	0	0	0	155,986
167	Daventry Town Centre	Daventry	Northamptonshire	1,173								16,110							1,343	0	0	0	0		1,343	13,267	0	0	0	0	0	0
129	Other Daventry	Daventry	Area Economies Report / Discussion with JPU officers															0	0	0	0	0	0		0	0	0	0	0	0	0	0
	Total	**Daventry**		**3,709**								24,780	0	180,741	0	0	0	205,521	2,065	0	2,259	0	0	0	4,324	20,407	0	148,846	0	0	0	169,253
		B Class Jobs		3,709																												
	Total	**Kettering**	**Emerging new figure provided by JPU**	**8,858**								55,444	57,145	212,025					4,620	1,587	2,650	0	0		8,858	41,583	42,859	159,019	0	0	0	243,461
		B Class Jobs																														
168	Butterfield Tech Park	Luton			23										55,000			55,000	0	0	0	4,583	0		4,583	0	0	0	39,722	0	0	39,722
169	South of Stockwood Park	Luton			9.5							38,000						38,000	3,167	0	0	0	0		3,167	27,444	0	0	0	0	0	27,444
170	Century Park	Luton							43							172,000		172,000	0	0	0	0	4,952		4,952	0	0	0	0	124,222	0	124,222
171	Napier Park	Luton	Draft Luton Local Plan									35,000	20,000					55,000	2,917	556	0	0	0		3,472	25,278	14,444	0	0	0	0	39,722
172	Other Luton	Luton	(Dec 2013)															0	0	0	0	0	0		0	0	0	0	0	0	0	0
	Total	**Luton**		**18,000**								73,000	20,000	0	55,000	172,000	0	320,000	6,083	556	0	4,583	4,952	0	16,174	52,722	14,444	0	39,722	124,222	0	235,789
		B Class Jobs		7,700																												
173	Magna Park	Milton Keynes							65.9					263,600				263,600	0	0	3,295	0	0		3,295	0	0	190,378	0	0	0	190,378
174	Shenly Wood	Milton Keynes							17.8							71,200		71,200	0	0	0	0	2,050		2,050	0	0	0	0	51,422	0	51,422
175	Eagle Farm North	Milton Keynes							28							112,000		112,000	0	0	0	0	3,225		3,225	0	0	0	0	80,889	0	80,889
134	Western Expansion Area	Milton Keynes							17							68,000		68,000	0	0	0	0	1,958		1,958	0	0	0	0	49,111	0	49,111
138	Central Milton Keynes	Milton Keynes	Milton Keynes Core	10,400								125,000						125,000	10,417	0	0	0	0		10,417	90,278	0	0	0	0	0	90,278
138	Other Milton Keynes	Milton Keynes	Strategy (July 2013)													75,000		75,000	0	0	0	0	2,159		2,159	0	0	0	0	54,167	0	54,167
	Total	**Milton Keynes**		**42,000**								125,000	0	263,600	0	326,200	0	714,800	10,417	0	3,295	0	9,392	0	23,104	90,278	0	190,378	0	235,589	0	516,244
		B Class Jobs		23,000																												
139	Northampton North SUE	Northampton										10,662	21,325	10,662				42,649	889	592	133	0	0		1,614	8,780	17,562	8,780	0	0	0	35,123
140	Northampton West SUE	Northampton																0	0	0	0	0	0		0	0	0	0	0	0	0	0
141	Northampton South SUE	Northampton																0	0	0	0	0	0		0	0	0	0	0	0	0	0
142	Northampton South of Brackmills	Northampton																0	0	0	0	0	0		0	0	0	0	0	0	0	0
143	Northampton Kingsheath SUE	Northampton																0	0	0	0	0	0		0	0	0	0	0	0	0	0
144	Northampton North of Whitehills	Northampton	West															0	0	0	0	0	0		0	0	0	0	0	0	0	0
145	Northampton Upton Park SUE	Northampton	Northamptonshire															0	0	0	0	0	0		0	0	0	0	0	0	0	0
147	Northampton Central Area	Northampton	Area Economies									100,000						80,000	8,333	0	0	0	0		8,333	82,353	0	0	0	0	0	65,882
176	Junction 16	Northampton	Report / Discussion									27,260	90,240	90,240				207,740	2,272	2,507	1,128	0	0		5,906	22,449	74,315	74,315	0	0	0	171,080
147	Other Northampton	Northampton	with JPU officers	19,791								74,915	-349,850	490,825				215,890					0		0	61,695	-288,112	404,209	0	0	0	177,792
	Total	**Northampton**		**19,791**								212,837	-238,285	591,727	0	0	0	566,279	11,494	3,099	1,261	0	0	0	15,854	175,278	-196,235	487,305	0	0	0	466,347
		B Class Jobs		15,833																												
148	Towcester	South Northamptonshire	West	1,500								6,440	3,540	2,660				12,640	537	98	33	0	0		668	5,304	2,915	2,191	0	0	0	10,409
149	Brackley	South Northamptonshire	Northamptonshire	1,000								12,000						12,000	1,000	0	0	0	0		1,000	9,882	0	0	0	0	0	9,882
177	Silverstone	South Northamptonshire	Area Economies	2,500								30,000						30,000	2,500	0	0	0	0		2,500	24,706	0	0	0	0	0	24,706
150	Other South Northamptonshire	South Northamptonshire	Report / Discussion													30,000		30,000	0	0	0	0	864		864	0	0	0	0	24,706	0	24,706
	Total	**South Northamptonshire**		**5,000**								48,440	3,540	2,660	0	30,000	0	84,640	4,037	98	33	0	864	0	5,032	39,892	2,915	2,191	0	24,706	0	69,704
		B Class Jobs		5,000																												
	Total	**East Northamptonshire**	**Emerging new figure provided by JPU**	**5,188**								52,748	-28,525	126,776	0	0	0	150,999	6,537	98	33	0	1,728	0	8,396	39,561	-21,394	95,082	0	0	0	113,249
		B Class Jobs																														
178	**Wellingborough**	**Outside SEMLEP**	**Emerging new figure provided by JPU**	**6,600**								37,800	12,960	247,200					3,150	360	3,090				6,600	28,350	9,720	185,400	0	0	0	0
	West Northamptonshire			**28,500**								249,057	-234,745	775,128																		

Appendix B – Assessment Methodology

SEMLEP Transport Strategy Trip Generation and Distribution Note

Introduction

1.1 Whilst no detailed modelling work was undertaken as part of the first stage Transport Strategy Review, an initial indication of the main current and forecast areas of demand for travel was carried out based upon a high level VISSIM exercise detailed in summary below.

Trip generation

1.2 As a high level exercise standard (unmodified) TRICS trip rates were used for the main development uses assessed, specifically addressing residential and 'B' class employment uses.

Table 1 - General Development Trip Rates

		Daily		
USE	AREA (M_2)	Arr	Dep	Two Way
Residential	Per Unit	2.56	2.685	5.245
B1 Business Park	Per 100m2	5.135	5.071	10.206
B2 Industrial Estate	Per 100m2	3.579	3.670	7.249
B8 Warehousing	Per 100m2	0.733	0.804	1.537

1.3 Following the generation of the trips those estimated to be journeys of less than 5.0km were removed from the generated trips due to the trip assignment taking place onto only the major road network. The threshold of 5.0km was used a suitable 'cut off' based upon the expectation that trips of this length or below would largely take place on local roads or on sections of the major road network within urban areas, where junction capacity rather than link stress would often be the determining factor and which would therefore not provide useful information at the high level being addressed within this study.

1.4 To remove these trips the 2001 Census Distance Travelled to Work (UV35) table was used. For each of the districts within SEMLEP the percentage of residents travel to work trips under 5.0km was calculated and the relevant proportion removed from each of the developments trips dependant on the relevant district.

1.5 The generated trips were distributed using a gravity model and then assigned to a simplified major road network using an all-or-nothing assignment based upon estimated freeflow travel times, the basis of the model is described in the following sections.

Trip distribution

1.6 The links for the modelled network were built using a GIS shapefile network based upon the DfT Traffic Counts shapefile, as this is a strategic assessment only motorways and 'A'

class roads were included within the network. This allowed the network to be linked to the AADT flows within the SEMLEP area from the DfT AADT dataset to form a base network. A shapefile of the road network was edited within GIS to incorporate nodes within the links at suitable loading points for the zones. This network was then imported into VISUM as the network links.

1.7 The zones for the model to create a continuous zoning system for the model area were created using 2011 Middle Super Output Areas (MSOAs). In addition to the continuous zoning system additional zones were overlaid to represent the locations of major individual development sites expected to be delivered by 2026 (housing sites over 1,000 units and employment sites over 10Ha) and based upon the housing and jobs numbers summarised in **Appendix A**. 2011 Census population data and an estimate of the number of workers (or jobs) within each MSOA was used to generate production and attraction factors within a gravity model used to distribute trips to and from the proposed development sites within the SEMLEP area. Due to current unavailability of Daytime Population data from the 2011 census, the number of workers/jobs was estimated by taking the Workday Population (this includes workers and those not working in an area) and then subtracting the Economically Inactive and Unemployed from this figure.

1.8 The gravity model allowed trips to be made between the development sites, where these trips took place the distribution procedure ensured that there were sufficient trip ends at the receiving development to accommodate those desiring to distribute there. If there is an over assignment then the attraction factor of that site was reduced in an iterative process until the there were sufficient trip ends to accommodate the allocated trips. The gravity model was calibrated to percentage of workers who travel up to 20.0km to work from the 2001 Census Distance Travelled to Work (UV35) table. The data for all of the districts within SEMLEP was combined to produce and overall value. The target value for calibration was 60.6% of trips being less than 20.0km and the model value achieved was 60.5% following calibration. The second comparison of journeys less than 10.0km had a census value of 32.2% with the model by comparison having 30.0%.

1.9 The trips were then assigned onto the highway network using an all-or-nothing assignment based upon estimated freeflow travel times. No consideration for junction delays or rerouting has been considered in this analysis.

1.10 Following assignment of flows the data was extracted from VISUM to be displayed in GIS. The assigned development flows were added onto the base DfT AADT values to enable a comparison against the CRF values and therefore provide an indicative level of stress on each link.

Appendix C – Scoring Notes

Score	Protect and enhance the built and natural environment	Provide high quality, safe access to services and opportunity	Maintain and enhance the regions links with the wider economy	Build capacity to enable growth and economic development	Deliverable and value for money schemes
2	Removes significant levels of traffic from sensitive urban areas / areas of landscape quality / AQMAs	Significantly enhances safe levels of access to town centres / employment / education	Improves links to National Networks M1 or A14, Major Rail Stations of Airports	Directly Releases a Major Housing or Employment Growth Site	Scored in excess of 50% in ARUP Project Pipeline Analysis
1	Removes traffic from sensitive urban areas / areas of landscape quality / AQMAs	Enhances safe levels of access to town centres / employment / education	Improve links to important Regional Networks	Directly Releases Housing or Employment site and / or indirectly releases a Major Site	Scored in excess of 40% in ARUP Project Pipeline Analysis
0	Neutral Impact	Neutral Impact	Neutral Impact	Neutral Impact	No Cost / Deliverablity Information available
-1	Increases levels of traffic in sensitive urban areas / areas of landscape quality / AQMAs	Reduces expected levels of safe access to town centres / employment / education	Reduces levels of access to Regional Networks	Reduces levels of access to / from housing or employment	N/A
-2	Significantly increase levels of traffic in sensitive urban areas / areas of landscape quality / AQMAs	Significantly reduces expected levels of safe access to town centres / employment / education	Reduces levels of access to National Networks	Reduces levels of access to / from Majore Housing or Employment Site	N/A